

# MINNESOTA MEDICINE

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## ILLINOIS LAY EDUCATION PROGRAM\*

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About four years ago the House of Delegates of the Illinois State Medical Society authorized the Council of the society to form what was then called a Lay Education Committee, but without instructions as to its duties except as was implied in the name of the committee; nor was the committee to be supplied with any funds.

However, at the end of twelve or fourteen months the committee had raised by voluntary subscriptions from our members of ten dollars or less, some ten or twelve thousand dollars, and we seemed therefore in a fair way to do something definite in educating the public about "something"; just what that something was, had not yet taken form.

But no sooner had word gone abroad that the medical men had money to spend on something—publicity, oil wells or what not!—than we were besieged by so-called publicity agencies, private newspaper writers, etc., who took our committee and even the council up on the high mountains surrounding Illinois, and promised to spread publicity into every nook and corner of our beautiful state, if we would only turn over a portion or all of our spending money to them. We all but fell into their trap.

One year had passed and nothing had been done except to raise the money, so we spent the first part of the second year securing and then unsecuring directors, each time spending a little of our hard subscribed money on experience.

During that second year, we secured the services of Miss B. C. Keller, who was with this committee until January 1st last, and who made many and valuable contacts during her stay with us.

By the end of the second year we had arranged a fairly definite program, but our money

was giving out. Our committee therefore devised a plan of a per capita tax on members of our state society, brought it before the House of Delegates at the state meeting, and had it ratified unanimously. Our tax is approximately \$1.74 per member per year and gives us a yearly income of approximately \$13,000.

It may surprise many of you to know the volume of work we are able to do on this allowance.

With this brief description of our early vicissitudes let us launch at once into the activities which we have thus far found valuable, not only to ourselves, and to all those organizations with which we have had the pleasure of coöperating, but most of all to the public in general who are already reaping health and happiness from our educational activities.

The words "propaganda" and "lay education" have been dropped from our vocabulary, as they are misleading and immediately put into the mind of the hearer a false meaning of our mission to humanity. We are neither a labor organization (although we recognize the necessity of such an organization of high minded men), nor are we an organization of business or professional men (although we believe in their existence), but we are an organization with an ideal and that ideal is service to humanity, the relief of suffering and the prolongation of life.

With these thoughts in mind we have formed our policies and ask that the members of our state society work as members of our committee in all our undertakings.

Experience has taught us to discard some of our early policies, as it has also taught us to hold fast to certain others. Coöperation with lay-medical organizations was something new to our committee, and you must know that a great deal of education of our own members was necessary in order to do any effective coöperating. Roughly speaking, about one third of our time and energy is spent on the education of our own members, and while we are doing this, we are also strengthening our county medical societies and assisting our legislative committee in its

\*Read before the annual meeting of the Minnesota State Medical Association, Duluth, Minn., June 30 to July 2, 1927.

strenuous work of combating bills detrimental to the health of our people.

Still another, and very necessary activity has sprung from our work in county medical societies; that of furnishing post-graduate work and taking it directly into the county where requested.

At the time this important work was undertaken by our committee, a special sub-committee was formed, called the Scientific Service Committee, with Dr. James H. Hutton as chairman. We now have every large medical school in Illinois and practically every teacher and clinician coöperating in this valuable undertaking. Any county society may now have one or all of their scientific meetings planned in advance, although the committee encourages the use of one or more local papers on all programs.

When the Scientific Service Committee was appointed, our name was changed to the Educational Committee, and is now known as such.

The county society is a unit of the state society and our committee has held fast to the principle that the county medical society is supreme in all health matters locally. We believe that the County Society should be consulted by all city and county officials and all health agencies of whatever description, on all medical and health subjects, for the reason that the physician is by education and training best fitted to give expert advice on all health policies. We do not believe the county medical society should be called on to do the actual work; that should be done by the lay-medical organizations and health authorities in consultation with the medical men. We do not believe clinics, baby shows and pre-school examinations should be held without consulting the county medical society. As a state society we frown on free clinics of any kind or description in communities where such service can be paid for. We believe in free medical service, both curative and preventive where indicated, and we are always glad to give freely of our service to all those charity cases, who are already receiving charity of some kind or another. We are slowly learning that the indiscriminate use of medical charity is demoralizing to the public; and through our passive resistance as medical men to such charity, it is also demoralizing the profession. Free medical charity is not worth much unless given with the desire

to be of service to humanity. Only a few charity clinics fulfill this requirement.

The days of passive resistance on the part of the medical profession are slowly drawing to a close in Illinois, and we believe the time is not far distant when every lay-medical organization in the state will be working with our county societies, and will assist us in eliminating all free medical service except to those deserving the same.

At the present time the work of our committee may be classified under six distinct headings:

1. Speakers Bureau
2. Radio
3. Press Material
4. General Health Education Service
5. Coöperating Organizations
6. Scientific Service Committee

*Speakers Bureau.*—For almost three years we have maintained this bureau as one of our most important activities. But a speaker is liable to go wild when he gets before a large lay group, so we not only choose our speakers with great care, but we also outline what they shall say. We found in our early work that even such precautions did not sufficiently safeguard us, so we devised two forms of questionnaire, the first to be filled out by the speaker himself, telling us what he thinks of his audience, the receptivity, applause, etc., the second to be filled out by the organization before which the speaker appeared. This makes for a well balanced check-up. To illustrate the need of these safeguards: A certain woman's organization, about twenty-five miles from a good sized town, was desirous of having a good speaker for one of their district meetings. Our secretary made all the arrangements for one of our new speakers to fulfill this engagement on the appointed day. As usual we wrote to our speaker inquiring about the meeting and requesting his expense account. At the bottom of our letter he wrote the following notation: "Successful meeting, glad to be of help to you, no expense incurred." By the next mail we received from the club a letter stating that their meeting was very successful and well attended, but that our speaker never showed up. Needless to say it took many months for our committee to square ourselves with that organization, and our new speaker, a prominent mem-

ber of our state society, lost a wonderful opportunity.

We are now furnishing speakers in any part of the state (without expense) to any lay group which so requests. We are serving the following organizations:

Illinois Federation of Women's Clubs; Rotary, Lions, Kiwanis, and Exchange Clubs; Parent-Teachers Association; Churches; Farm and Home Bureaus; Business and Professional Women's Clubs; High Schools; Normal Schools; University of Illinois Extension Service; Boy and Girl Scouts; Y. M. C. A. and Y. W. C. A., and recently groups in manufacturing plants, such as the Western Electric, Armour and Co., etc.

We have repeated calls for speakers from these organizations, so we are confident our speakers are pleasing, and all of our speakers are members in good standing of the state society. We are planning on giving our speakers a course in public speaking.

*Radio.*—Our radio service is something we are very proud of and is a definite and popular feature of our educational work. Programs are arranged for any local community having a broadcasting station, except W.O.C. at Davenport. By the way, you may be interested to know that four years ago there were about 3500 students at WOC, while today there are about 450. The Illinois State Medical Society claims the credit for this decrease as we have been successful year after year in combating vicious legislation which would allow hundreds of low grade non-medical men to ply their wares on the innocent public.

At the present time and in the fall we will have regular talks over WGN, WLS, WMAQ and several other well known stations. Our radio talks are as carefully checked up as are our speakers.

*Press Material.*—This is the one great medium through which we expected to direct the people back to scientific medicine, not through paid advertising, but through press material on health education of interest to the local communities, regularly supplied. If Brady, Reed and Evans are good (and sometimes they are), then the combined membership of our society should be better. We are, therefore, constantly gathering material, rewriting, censoring and rechecking

material for our regular users. But, please remember that after our committee is through with checking this material, it is then sent to the county medical society, in which county it is to be used, for a re-check. Some of the articles are unsigned, but most of them are signed by the county medical society. Our subjects are made to fit the local needs.

We have some eighty or more newspapers in Illinois using our material constantly, some weekly, semi-weekly, bi-weekly and daily, and you may be sure it keeps our committee hustling to supply the demand. This service is free to the newspapers. Only recently our committee, co-operating with the Chicago Medical Society, has begun a series of six weekly articles in the *Herald Examiner* of Chicago. This is our first contact in so large a city. These articles are censored by every member of our educational committee, and needless to say a goodly number of articles never go to press. These articles appear under a special streamer with the special heading "under the auspices of the Educational Committee of the Illinois State Medical Society," and are signed by the contributor. This is the only ethical way such articles may be signed. We have no trouble in getting our members to write these articles, but we do have hard work keeping everybody from writing them. We have received many favorable comments on these articles, as well as those published throughout the state. This work will be continued for the present, but the committee is not sold 100 per cent on this work, as it is on the speakers bureau and radio talks.

*General Health Education Service.*—This consists in the furnishing of moving picture films on health subjects and in supplying the same to many groups. We obtain these films from many sources and pay rental on them if required. We also arrange posters and health exhibits for high schools, clubs and many other organizations, together with a special program on health educational activities. At the present time we are rewriting the health material for the Child Hygiene Division of the Illinois State Department of Health.

Furthermore, we are working in coöperation with the Extension Service of the University of Illinois on the examination of Honor Girls in the four-H Clubs. The state dental society is

also working with us, and girls will be examined in ten counties. Letters have been sent to county superintendents announcing our plans for a series of lectures in high schools and offering our services in furnishing speakers for county institutes. More than twenty requests have already come in for speakers for institutes and several superintendents have signified their interest in the Series.

*Cooperation with other organizations.*—During the first two years this subject did not appeal to our committee, but as we became personally acquainted with leaders in some of the lay health groups, we decided they were not such a bad lot. We even consented to break bread with some of them, and actually found some subjects we could discuss in common, and some health work we might coöperate in. This was good news to both groups.

Some of our first and most reliable contacts were with the Illinois Federation of Women's Clubs, with some 80,000 members; the Parent-Teacher Association of some 80,000 members; the Illinois State Department of Health, and the Illinois State Dental Society. We have sat around the table many times with these groups and discussed the welfare of the public health. We are constantly supplying all of them with speakers, while our physicians are coöperating with the Illinois State Department of Health, Child Hygiene Division, and were helpful in increasing their appropriations by \$20,000 for the next two years. We believe that these five great organizations with their thousands of members

will be able to go to our legislature in the very near future, and demand more money for the education of our mothers and fathers on health subjects.

Last fall the Illinois Federation of Women's Clubs and the Illinois State Medical Society through our committee, decided to run a campaign of pre-school child health examination, and offered a prize of \$500 to the club which did the most efficient work. In that great drive many thousands of children received their first physical examination.

Our Committee feel this one drive justified all our work and expense.

*Scientific Service Committee.*—In addition to what has already been said regarding this subcommittee work, may I state that at our state meeting and at the dental meeting every year in Chicago, this committee not only demonstrates a complete physical examination, but actually does examine all applicants, giving them a complete written report of their physical condition. We are thus spreading the doctrine of periodic health examinations in an effective manner.

*In Closing:* Along with all our other activities we are assisting our state in combating state medicine in nearly every form. We have allowed no paternalistic movement to gain a foothold in our fair state.

We believe in decentralization of power and that means the county and not the state or nation is the supreme authority on all things local, medical or otherwise. We believe in pre-natal and post-natal education of mothers and best of all we believe in charity liberally bestowed.

#### REPORT ON WINDOW GLASS SUBSTITUTES

The Council on Physical Therapy publishes a report of work carried out under its auspices, to determine the efficiency of certain window glass substitutes for transmitting the antirachitic rays of sunlight. The transmission of ultra-violet rays was determined both by spectroscopic analysis and by the biologic effects of the transmitted light on the growth of chickens. The following materials were tested: Vitaglass (transparent), Cel-O-Glass, Flex-O-Glass and Corning Glass. Vitaglass and Corning Glass are stated to be true glasses. Celoglass is composed of wire-mesh screen filled with an apparently celluloidinous material. Flexoglass is a thin, fairly loosely woven cloth treated with a paraffin-like substance. The Vitaglass and the Celoglass transmitted a large percentage of the sun's ultra-violet rays,

since the chickens reared behind these glasses showed similar development to those which received ultra-violet radiation from the artificial source. Chickens which received the sunlight through Flexoglass did not show the same growth as did the irradiated controls, but did gain more rapidly than those receiving sunlight through window glass. The Corning Glass was received too late for the biologic test, but from the spectroscopic measurements it is evident that this glass is equal to the best of those tests in its ability to transmit the antirachitic rays of the sun. The study leads to the conclusion that there are now available materials for glazing windows which do not possess the fault of window glass in excluding the health-giving rays of sunlight. (Jour. A. M. A., May 14, 1927, p. 1562.)



## THE NON-OPERATIVE TREATMENT OF FRACTURES OF THE UPPER EXTREMITY\*

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There can be no question as to the importance of the place which the subject of fractures occupies in medical practice today. Industrial expansion, the introduction of the automobile and the speeding up of life generally has resulted in an increase in the number of fracture cases everywhere, and an increase in the number of serious fractures. Furthermore, the functional results of treatment are being considered from a far more critical viewpoint than in the past. The result has been a tremendous outpouring of literature dealing with methods of treating fractures, and advocating the use of this or that procedure as the most advantageous, until the entire field has become confused and beclouded. The greatest need in the fracture problem today is a standardizing of our methods and a weeding out of many individual and unnecessary procedures which serve no purpose but that of complicating our problem of securing the best functional results in the shortest possible time.

The first step in bringing about such a standardization is to definitely separate the treatment of fractures into two main divisions: the non-operative and the operative methods. These two methods are not parallel and cannot be discussed simultaneously. The non-operative treatment of fractures can be successfully carried out by any well-trained physician, who gives it the study and care it demands. The operative treatment of fractures, on the contrary, deserves almost to be considered a specialty; it is difficult manual labor, requires extraordinary care in the preservation of asepsis, and necessitates a special armamentarium possessed by few general hospitals and no general practitioner. Accordingly, in this presentation of the treatment of fractures of the upper extremity, we will consider only the non-operative method of treatment, omitting from the discussion such fractures of this region as are generally admitted to be better adapted to treatment by the operative method.

It may be stated that in general there are two standard methods of treatment used in the non-operative management of fractures: (1) the reduction and fixation method; (2) the traction method.

All other methods are variations of these, and may be considered as special methods and not entering into this discussion.

*The Reduction and Fixation Method.*—This is the traditional method of "setting" the fracture by closed manipulation and retaining it in proper alignment by the immediate application of splints, which immobilize the fracture together with the joints above and below. This method, while fairly efficient in many fractures, has distinct disadvantages. It requires an anesthetic and, as the patient is usually disinclined to submit to this any oftener than is necessary, there is a tendency to let well enough alone if complete reduction is not obtained at the first manipulation. There is the risk of applying splints too tightly with resulting circulatory disturbances. It is difficult, and a times impossible, to maintain the reduction while applying the fixation dressing, and serious displacement may occur even after the splint has been applied, due to muscle spasm and the difficulty of getting splints closely applied. Finally, there is the difficulty of caring for the soft parts and using the physio-therapeutic measures so necessary if early function is to be restored.

*The Traction Method.*—The use of continuous traction or extension constitutes the basic feature of the traction method. When we consider that given a solution of the continuity of a bone, the resulting displacement is due entirely or largely to muscle pull and muscle spasm (for even when the traumatizing force causes a deformity, the muscle spasm maintains and frequently increases it) it becomes evident why traction is so useful a therapeutic agent. Traction overcomes muscle pull and muscle spasm and secures alignment by exerting a pull in the direction of the normal anatomic lines. Traction aids in securing immobilization by putting under tension the fascia and muscles surrounding the bones. Reduction is brought about gradually without the necessity of anesthetic or traumatizing manipulation. Finally, when properly applied, the extremity is easily accessible for physio-therapeutic measures.

It is our opinion, then, that as a standard

\*Read before the annual meeting of the Minnesota State Medical Association, Duluth, Minnesota, June 30 to July 2, 1927.

method for the non-operative treatment of fractures in general, traction is the method of choice whenever it can be used. It has been our experience in fractures of the upper extremity that traction gives by far the most satisfactory re-



Fig. 1. Clavicular cross, applied.

sults, and it is the routine method used in our clinic for all fractures of this region which are considered as being amenable to non-operative treatment with four exceptions, which are: fractures of the lower end of the humerus, fractures of the shaft of the radius, fractures of the head of the radius without displacement, and Colles fractures.

In the management of fractures in general, there are certain well-founded principles which apply to the treatment of fractures of the upper extremity. A brief consideration of these principles at this point will obviate the necessity of discussing them in connection with the individual fractures and save repetition. Fractures should be splinted at the place of accident and then the patient removed to the hospital or office. This reduces suffering and shock, cuts down undesirable muscle spasm, thus preventing wide separation of fragments and making reduction much less difficult. A careful examination should be

made, both physical and x-ray. It is particularly important to note injury to blood vessels, nerves and soft parts, as such complicating injuries are always of great importance. The fracture should be reduced and definite treatment applied at the earliest possible moment, as correction of deformity becomes increasingly difficult with the lapse of time, due to the infiltration of the soft parts with hemorrhage and inflammatory exudate. Whatever form of fixation is used for splinting, frequent observation should be made of the injured part to guard against pressure sores and tight bandaging. Roentgen-ray examination should be made as soon as possible, a check ray made after reduction and repeated at such intervals as may be necessary to be sure that the position is being maintained. All roentgenograms should be made in two planes, and frequently one of the sound side taken for comparison. Massage of a light character should be started as early as possible, within one to two

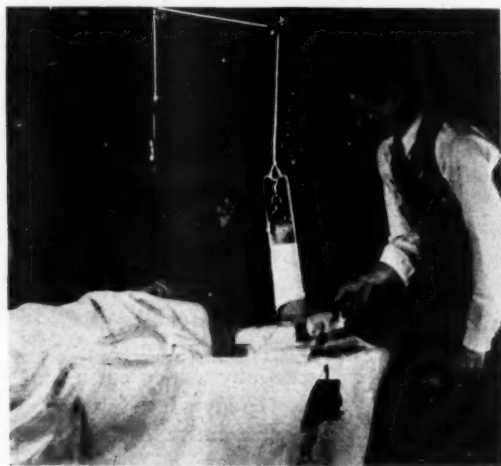


Fig. 2. Abduction-traction apparatus, for fracture of neck of the humerus.

weeks, and passive motion of the most careful type soon afterward. Probably the greatest advantage which results from the use of traction in the treatment of fractures of the upper extremity is that it permits of early massage and movement so that the adjacent joints do not become stiff and the muscles atrophied; as a result a more rapid return of function is possible.

As it is the purpose of this paper to point out as briefly and concisely as possible a standard method of non-operative treatment for each of

the most usual fractures of the upper extremity, we will not discuss the points of diagnosis and types of displacement met with in the individual fractures. We assume that you are already familiar with these and feel that a discussion of such well-established facts is unnecessary. One form of treatment which has been generally accepted as a standard form and which has proven the most useful in our clinic will be described for each fracture. By discussing the treatment of fractures of the upper extremity in this way, it is hoped that confusion may be avoided and perhaps some useful information imparted.

1. Fracture of the clavicle. Traction is used in the management of this fracture in the form



Fig. 3. Abduction aeroplane splint, to supplant traction at the end of three weeks in fracture of neck of the humerus.

of a T-splint or clavicular cross (Fig. 1). This splint properly applied pulls the shoulder up and back, immobilizes the fragments and permits the person to be ambulatory and use the arm. In applying this splint, the cross-bar should be placed well up on the base of the neck, then as the upright bar is brought down against the back, traction upward and backward on the shoulder is secured. This splint should be adjusted and tightened every two or three days and may be

discarded at the end of three or four weeks. The use of narrow stockinette as a bandage avoids constriction under the arm and increases the comfort of the patient.

2. Fracture of the surgical neck of the humerus. Traction in abduction with a varying de-

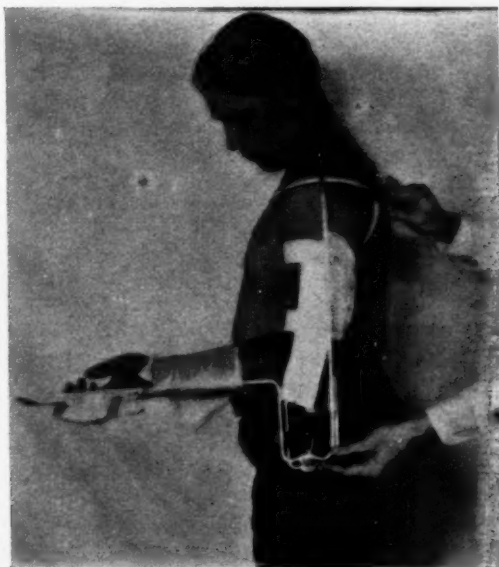


Fig. 4. Abduction-traction apparatus, for fracture of shaft of the humerus above insertion of M. Deltoid.

gree of external rotation, the patient being in bed, is our routine treatment in this fracture. Traction is applied by adhesive strips with the elbow flexed to permit of regulating the external rotation. The arm is suspended from an overhead frame for comfort (Fig 2). At the end of two or three weeks, an aeroplane splint may be substituted and the patient allowed up (Fig. 3).

3. Fracture of the shaft of the humerus. This is best treated by a traction splint of the Jones type (Fig. 4). Traction is made by adhesive strips. When the fracture is below the insertion of the deltoid the addition of a chest support to hold the arm in about 50° of abduction adds materially to its efficiency (Fig. 5). Coaptation splints may be used. Motion may be started in four to five weeks. Injury to the musculospiral nerve occasionally occurs in connection with this fracture.

4. Supracondylar fracture of the humerus. In treating this fracture, manipulation and fixation is the method to be used. In fractures of

the lower end of the humerus, the lower fragment is displaced backward by the fracturing force and the muscle pull. In reducing the fracture, an anesthetic should be given, and the following manipulation carried out: with the elbow extended, traction is made on the forearm, the elbow is then brought into hypertension to disengage the fragments, then with traction con-



Fig. 5. Abduction-traction splint, for fracture of shaft of the humerus below insertion of M. Deltoid.

tinued, the elbow is brought into acute flexion, locking the fragments in place. After reduction, the entire extremity is immobilized in acute flexion in the Jones position. This position may be modified to meet the needs of the individual case. The best method of holding the fracture in this position of acute flexion is by a posterior molded plaster splint (Fig. 6). Circular dressings should be avoided as this fracture is usually associated with considerable hemorrhage and swelling which may compress the veins and nerves at the elbow. As the result of compression of the veins, we have the venous return from the hand and forearm cut off with the production of congestion and infiltration of the muscles. As a result of pressure on the median, ulnar and musculospiral nerves, we get degeneration and interference with the conductivity of the nerves. Volkman's ischemic paralysis, which

is such a frequent and disastrous complication of fractures involving this region, is caused by such compression of veins and nerves.

5. Fracture of the shaft of the radius. In treatment of a fracture of the shaft of the radius alone, the manipulation and fixation treatment is usually adequate. If the fracture is above the insertion of the pronator radii teres, reduction is made by forcible extension and the fracture splinted with the hand in supination. If the fracture is below the insertion of the pronator radii teres, the reduction is made by forcible extension with the hand put up in pronation. In these fractures, a molded plaster splint is the most efficient form of support. Motion should be started in three weeks.

6. Fracture of both bones of the forearm. It is our experience that traction is by far the most efficient method of treatment for such fractures. The traction is best applied through a traction splint which gets its counter-traction against the lower end of the arm with the elbow bent. Several splints have been devised for this fracture of the forearm by traction, and a very efficient



Fig. 6. Jones position for supra condylar fracture of the humerus.

splint may be improvised by bending a heavy piece of wire in the proper manner and fixing it just above the elbow with a few turns of plaster bandage. Traction is secured through adhesive strips tightened by twisting a stick (Spanish Windlass) (Fig. 7).

7. Colles fracture. In this fracture, manipulation and fixation is the method of choice. Re-



duction under an anesthetic is usually necessary. The reduction is made by hyperextending the wrist to break up any impaction present, then traction and forcible flexion sweeping the hand toward the ulnar side. We are accustomed to fix our Colles fractures in acute flexion with some ulnar deviation, using a molded plaster splint (Fig. 8). In this position, the muscles aid in maintaining reduction. Tearing of the radial ulnar ligament with luxation of the lower end of the ulna complicates this fracture and in making the reduction, care should be taken to secure a proper reposition of the ulna, as failure to do so results in impairment and weakness of the wrist. The splint should be worn two to three weeks in Colles fracture, less time (ten days) in old arthritic cases, as stiffness in the wrist and fingers and interference with function results if these joints are immobilized longer.

8. Metacarpal and phalangeal fractures.—While many of these fractures can be treated with simple palmar splints, especially fractures in the shaft, many of them will do much better with traction. This is the case when the fracture involves the ends of the bones or one of the

We have omitted from discussion a number of fractures of the upper extremity as they should be classed as operative fractures. These fractures include fractures of the olecranon, frac-



Fig. 8. Position of hand (wrist flexion and ulnar deviation) for Colles fracture.

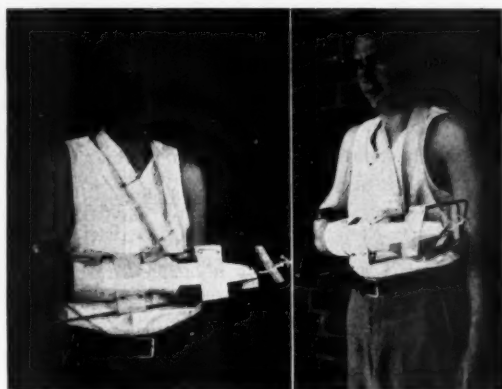


Fig. 7. Traction apparatus for fracture of both bones of the forearm.



Fig. 9. Traction apparatus for phalangeal fractures

joints. Traction can be applied by using the various traction splints, although here also a traction splint can be very readily improvised by using a piece of strong wire bent in a U-shape, and attached by plaster above the wrist, traction being secured by attaching elastic bands to the fingers with adhesive (Fig. 9).

tures of the head of the radius with displacement, fractures of both bones of the forearm low down in the wrist within the pronator quadratus muscle and fractures of the carpus. The methods here advised are not given as original but as standard methods and are those which in our experience have been the most reliable and have resulted in securing the best functional results in the shortest possible time, which is the aim of all successful fracture treatment.

#### CONCLUSIONS

1. The best results will be obtained in the treatment of fractures by selecting a standard method for each fracture and adhering to this method so far as possible.
  2. In our experience, traction is the most useful method of treating fractures of the upper extremity, with certain exceptions.
  3. Traction is applicable in most of the usual fractures of the upper extremity by using one of the efficient traction splints, which are easily procured or made.
- 1807 Federal Reserve Bank Bldg.

#### "IODEX" IN THYROID DISTURBANCES

A pamphlet published by the Pharmacal Advance Press, the house organ of Menley and James, Ltd., the firms that sells Iodex, is devoted to promoting the use of iodex ointment in the treatment of systemic goiter by rubbing ointment into the skin over the thyroid gland twice a day, and also recommending iodex ointment for a number of other pathologic conditions. The Council on Pharmacy and Chemistry has reported that the preparation was practically devoid of free iodine, that its composition was incorrectly stated, that the total iodine content was only about three-fifths of the total amount of iodine claimed, and that therefore its use for securing iodine effects is unwarranted. Almost any intelligent physician knows that the attempt to treat systemic goiter by rubbing such an ointment into the skin over the goiter is preposterous. However, this is but one of many ridiculous statements in the pamphlet mentioned. (Jour. A. M. A. April 30, 1927, p. 1438.)

#### THE LYE BILL

Congress passed the Federal Caustic Poison Bill, March 2, and the President signed it on the following day. This requires that household packages of lye, ammonia, carbolic acid, oxalic acid, and other caustic substances named in the law be distinctly labelled "Poison," with instructions as to emergency treatment in case of accident. (Jour. A. M. A. March 19, 1927, p. 926.)

#### VITAL FACTORS IN THE TREATMENT OF CHRONIC MYOCARDIAL INSUFFICIENCY\*

CHARLES LYMAN GREENE, M.D.  
Saint Paul

Mr. President and Members of the Hennepin County Medical Society:

In no division of medicine has more knowledge been attained during the past twenty-five years than within the cardiovascular field and in none has such achievement been more lacking in a realization of its possibilities of clinical application.

At no time perhaps since the days of Harvey has a greater divergence of opinion existed between able and honest clinicians and never has so great an addition to sound knowledge and improved technic resulted in so small a gift of added service to the sick.

Obviously, such conflicts of honest opinion and practice as now exist, depend upon vital differences in viewpoint and when examined these are found to cover a wide and diversified field which embraces factors of tradition, habit, terminology, diagnostics, interpretation and therapeutic application.

Tradition leads us to think of chronic heart disease almost wholly in terms of advanced decompensation.

It makes us too often accept "heart-death" in the elderly which is actually premature as merely a "natural process of decay."

*Habit fixes our attention too largely upon bruits and the endocarditic lesions.*

*Terminology substitutes a bastard term such as "chronic myocarditis" for the broader yet more correct one, "myocardial insufficiency."*

*Faulty conceptions of the size of the normal heart and its great variations lead to multitudinous errors of omission in the detection of morbid enlargement.*

*An over-emphasis placed upon the impeccability and finality of post-mortem findings dims the true clinical conception which demands that impaired function be held always in the foreground as a spur to action.*

*The failure to demand early diagnosis, together with a morbid fear of the "cardiac neurosis,"*

\*Paper delivered by invitation to the Hennepin County Medical Society, Minneapolis, Oct. 4, 1926.

leads to wholesale neglect and a false interpretation which places the stigma of "neurosis" upon a host of sufferers from genuine, if masked, cardiac inadequacy.

Early diagnosis failing and a competent conception of myocardial reserve, its peculiarities and therapeutic possibilities, still generally lacking, diagnosis and treatment must be and are, laggard and halting.

Cardiopathies, broadly speaking, fall into two chief age groups. The one covers the first three or four decades of life, embraces congenital lesions and shows a heavy predominance of frank, primary, endocarditic defects.

The second group, with which this paper deals, covers the later stages of persisting organic endocarditic lesions, but comparatively few of recent origin, though non-organic mitral defect is common and pronounced. Its chief and most interesting components are the non-endocarditic lesions and, especially, that great group of myocardial insufficiencies which we term, falsely for the most part, "chronic myocarditis." These we know include in actual practice myocardial degeneration of various types and degrees and of most mixed and indeterminate character as well as many failing hearts showing at autopsy neither degeneration nor inflammation. The so-called "silent heart," deadly and most misleading, finds a prominent place in this age group and we must add that variable factor, coronary sclerosis, and most of the cases of acquired luetic disease of the heart and aorta.

Both age groups include the many cases of myocardial exhaustion or inadequacy, with or without distinct pathologic changes which occur with such frequency in the congenitally underpowered and, usually, toxic hearts of large numbers of viscerotomic individuals. For these the snappy and convenient term "effort syndrome" has proven calamitous in robbing them of their right to consideration as heart patients, for the most part susceptible of great improvement or actual cure.

Of late, there has been a tendency to multiply greatly the number of cases supposedly entitled to be called "hypertension hearts," but the correctness of this procedure may be questioned. Such a clinical group has long been recognized as genuine but it is probable that only a relatively small proportion of inadequate hearts associated

with arterial hypertension owe their insufficiency primarily to that condition even though both may be the result of the same toxic factor.

It is difficult to conceive of the chronic non-endocarditic heart lesions of middle and advanced age as anything other than end-results of toxemias.

Varying grades of increased blood pressure would be anticipated as a late manifestation and associated causes must be given their full value. Even in advanced, decidedly decompensated cases, not more than 40 per cent of the readings encountered are sufficiently high to constitute even a major contributory element.

Decompensation itself tends to heighten arterial pressure in many instances and, quite generally, the application of measures to rest the heart and strengthen the myocardium reduce more or less sharply the height of the readings.

The members of the first main age-group, for the most part, are frank, noisy and easily recognized and identified, offering upon the autopsy table full opportunity for a satisfactory accord between pathologist and clinician.

Those of the second group are of a far different character in large part and instead of serving to demonstrate the optimum of accord between pathologist and clinician, tend rather to prove how far apart two earnest and skilful men may be at times, when one's chief concern is the living body and that of the other the presentation of a concrete cause of death at the autopsy.

The pathologist deals with demonstrable concrete changes evidenced in dead tissue. The clinician, if himself alive to his responsibilities, deals primarily and chiefly with myocardial defect as evidenced by inadequacy of function.

As Doctor Henry Christian wrote a few years ago, relative to this topic, the clinician often finds that he and the pathologist "do not speak the same language." A heart which certainly killed its possessor is not of necessity the seat of such demonstrable, specific and concrete changes as are adequate to explain the death. The primary, chief and vital interest of patient and physician alike is bound up in the condition of the heart-muscle as reflected in a failing myocardial reserve.

A man may have an auto-audible aortic regurgitation and a double mitral lesion and yet stoke a locomotive for years without serious em-

barrassment. On the other hand, one with no bruit, and a heart sub-normal in size as judged by standards still regrettably prevailing, may die a "heart-death" which defies specific pathologic explanation.

*The more extreme examples of the great viscerotrophic group of our people never acquire a myocardial reserve sufficient to equip them for a strenuous life. A larger number of the same group are living always under the handicap or threat of a narrowed myocardial reserve precipitable by any one of many disease toxins or any thing producing a sharp drop in their nutrition.*

It is a safe, sound and logical assumption that acquired chronic myocardial insufficiencies, whatever their specific clinical and pathologic association, are, in general, the result of repeated toxemias which may or may not have left a mark recognizable at autopsy. It is certain that apart from the primary phases of actual endocarditis proper, decompensation is developed very gradually.

*It is a deplorable fact that at present, with rare exceptions, we detect non-endocarditic myocardial deficiencies of the elder group only when far advanced or even only when death is impending.*

Unfortunately or not, proper service to the heart-case necessitates oftentimes the acceptance of *subjective symptoms* as adequate testimony of myocardial insufficiency even in the absence of all gross objective signs. *Here lies a risk of error, real, yet trivial when contrasted with the tragedies of omission at present chargeable to belated recognition.*

Indeed, we have faced and surmounted the same problem in connection with the campaign against pulmonary tuberculosis and the net result of that undertaking despite the inevitable formation of groups of imaginary cases and the occasional mistakes inseparable from extra-early diagnosis, has been one of the greatest achievements of medicine.

That point of view which leads an able and sincere clinician to assert that most heart disease is "imaginary," does not advance the cause of the genuine cardiopath and too great a fear of "cardiac neurosis" certainly invites and, indeed, makes inevitable, a host of diagnostic errors and therapeutic omissions.

It is high time that the cardiopath was given

his chance, as he would have been long ago, had his ailment been contagious.

As affecting either the individual patient or group-prevention, the earliest possible recognition, retardation and prompt and effective management are as important in myocardial insufficiencies as in pulmonary tuberculosis.

With respect to prolongation of life, a timely and efficient therapeutic initiative based upon the earlier recognition and intelligent evaluation of minor signs and symptoms, is as important in the one condition as in the other.

The heart is the body's engine—the most vital and important motor in the world—yet the only one whose impairments and age-defects usually are neglected until cessation of function is not only foreshadowed but threatened or actually at hand.

*That early diagnosis which is the essential prerequisite of effective and timely therapy depends basically upon a knowledge of myocardial reserve and the clinical evidence of its impairments, not upon the recognition of gross decompensatory symptoms.*

Reserve is the quality which gives to the heart its resiliency. It is the attribute which is first affected by damaging tonus-defects and these in turn, whether attended or unattended by gross demonstrable dilatation, are the first cardiac manifestations of a toxemia, inflammation, or advancing degeneration.

*In the last analysis, therefore, it is the evidence of impaired reserve which we must detect in making a timely diagnosis and the maximal rehabilitation of that reserve which we must attempt to achieve in direction or treatment.*

In the cardiovascular apparatus we have something infinitely delicate yet marvelously adapted to endure punishment and for long to overcome handicaps gradually induced. Over-loads, excessive local demands, or super-abundant supply, are promptly and adequately met by the harmonious interaction of the medullary centers, the arterial system and the heart itself. Even the vital intrinsic circulation of the myocardium, ten-fold that of the skeletal muscle, is under exquisite compensatory regulation.

Assume the existence of a damaging toxemia with or without inflammatory or degenerative changes and you have still to consider the tremendous (thirteen-fold) reserve which for long



may be drawn upon, the ease with which burdens of involved areas may be transferred and equalized, and the tremendous aid afforded by vaso-motor control both intrinsic and extrinsic.

It is evident that none of the grosser symptoms of decompensation need be obvious until the lapse of many months or years and, sometimes never before death, but evident, nevertheless, that long before this time periods of detectable lessened reserve and harmful overstrain must inevitably occur.

This means that despite hypertrophy, if that be present, the field of symptomless, painless response, to unusual or even to habitual effort, is narrowed to the point where recognizable symptoms must arise. It is logical and inevitable that these primary symptoms of insufficiency of the heart-muscle will be manifested first, chiefly or wholly, in subjective discomfort due to tonus-deficiencies, with or without associated demonstrable dilatation of the heart.

The tonicity of heart-muscle is a passive but defensive contraction resisting over-distension in diastole and permitting no "slack" that must be taken up or "slip" to be overcome by the heart-muscle in its recurring active contraction. It insures a good "footing" and a firm "take-off" for effective, forceful, rhythmic systoles.

Tonus-deficiencies of a symptom-producing grade but lacking demonstrable dilatation are extremely common, especially in the drop-heart and its variants, to the vital clinical importance of which I directed attention over a decade ago. Indeed, most urgent symptoms of heart failure may arise in the absence of any readily demonstrable gross change in heart outline.

So also in greatly enlarged hearts with evidence of profound decompensation, restoration of reserve, maximal for the individual case, may be unaccompanied by any marked degree of heart shrinkage, or, on the other hand, may be associated with a great reduction in the heart diameters.

*One hears doubt expressed as to the possibility of a chronically dilated hypertrophied heart materially changing its outline under treatment. The accompanying illustrations prove that many such hearts can, and often do, undergo a remarkable shrinkage.*

In the opinion of the writer tonus-deficiency is the chief, basic source of heart symptoms, sub-

jective and objective, apart from the bruits of endocarditis, pericarditis, congenital lesions and certain of the mechanical vascular phenomena, as in aortic regurgitation.

Among the conditions affecting tonus are:

1. *Circulating toxins as in the case of acute and chronic infectious disease, chronic nephritis, hidden foci of infection, acidosis or the ingestion of certain poisons, organic or inorganic.*
2. *States of decided or profound anemia.*
3. *Other conditions associated with decided nutritional disturbances, especially in the viscer-optotic group.*
4. *Degenerative and inflammatory disease of the heart-muscle.*
5. *Impairment of the intrinsic circulation of the heart.*
6. *Myocardial overstrain, isolated, continuous or intermittent in the presence of any of the factors elsewhere stated.*
7. *Emotional crises.*
8. *In weakened or unstable hearts, excessive heat or this combined with vitiated air, hot baths, or prolonged sweating.*
9. *Unduly prolonged confinement to bed.*
10. *Surgical shock.*
11. *The over-administration of digitalis.*

The sthenic type of heart resists adverse influences far better than the asthenic type and to what degree purely vascular disturbances outside the heart react upon myocardial tonicity we do not know, but cannot doubt their potency as contributing factors.

In the already diseased or congenitally inadequate heart periods of overstrain are very common. Any new infection, any relighting of an existing, primarily causative, septic focus, any decided advance in an already established inflammatory or degenerative process, may affect to a greater or less degree myocardial tonus and, consequently, the reserve power of that heart. Many or most even of these impairments will be temporary and trivial, but from time to time those of a severe grade or greater persistence occur, recovery is less and less prompt and complete and any existing pathological process is accelerated or a primary congenital weakness or inadequacy intensified.

*The teleoroentgenograms here shown, prove the relatively small size of the average normal heart, the wide variability in normal heart diam-*

*eters, the astonishing response of heart outline to properly controlled and regulated treatment in some instances, the recovery of heart strength with little or no change in outline in others, the instability of re-established reserve often encountered in myocardial insufficiency and its remarkable stability in others.*

To successfully diagnose and treat myocardial inadequacy in its chronic and established form the free use of roentgenography is absolutely essential. For years every suspected heart-case coming to my office has been filmed. Therapeutic results with respect to diameters have been determined and the case checked as regularly and systematically as conditions permitted by the same means.

All pictures have been taken at the end of inspiration and the accuracy of technic attainable for purposes of comparison is illustrated by the three consecutive exposures of the same heart shown in this article which yield a diameter variation of but one millimeter. In practice, however, we disregard all variations which do not reach or exceed five millimeters.

*One must know the outline and dimensions of a suspect heart.* Our old landmarks, the nipple and the mid-clavicular line have become practically worthless and the P. M. I. is at best but a rough indicator.

In the markedly gastropototic person, male or female, one is unlikely to find a normal heart diameter exceeding 11 cm. at the end of inspiration and the measurements of 8, 9, 10 cm. are quite commonly encountered with definite symptoms of decompensation (misnamed "effort syndrome"). Sthenic robust individuals lacking gastropotosis do not show in this phase of respiration heart diameters exceeding 13.5 cm. unless that organ be pathologically enlarged, though at the time and over months or years it may be fully compensated and wholly symptomless.

The known peculiarities of outline associated with various types of heart lesions are valuable as is the comparative diameter of the heart and chest (See teleoroentgenograms).

In my office we *very roughly* determine from the six-foot film the ratio of the diameter of the heart to the internal chest diameter at the end of inspiration. If in a sthenic individual with suggestive symptoms we find the ratio between the two diameters greatly exceeding 40 per cent,

or, if in a decidedly gastropototic subject, it exceeds grossly 33 or 34 per cent, we feel morally certain that we are dealing with an enlarged heart. It is a useful but coarse method.

Accurate percussion is extremely important when teleoroentgenograms are unavailable and is obtainable only by modern technic and, as I pointed out several years ago, with the patient erect or, at least, in the sitting posture. The old flat-finger method is well-nigh useless for correct determinations.

*A well-taken case history must be had always and a knowledge of the great number and diversity of symptoms, subjective and objective of cardiac origin is indispensable.*

One of the most helpful of early symptoms is *bilateral and equal pretibial edema*, often only diurnal as pointed out by me several years ago.

*Edema.*—This when pronounced in advanced cases, is the most strikingly objective of the commoner gross symptoms and the most marked of any save pronounced dyspnea or profound cyanosis. *In its slighter and earlier forms it is very generally overlooked, for, contrary to the accepted belief, the writer finds that in such instances it is manifest earliest over the upper- or mid-leg and wholly absent at the ankle. The patient carrying it in this deceptive form is often unaware of its presence and denies its possession. It may exist for years before the grosser and graver symptoms of decompensation manifest themselves, but is a sign of cardinal importance, serving often times as a valuable diagnostic aid in doubtful cases and a useful therapeutic indicator in patients under observation.*

*Cardinal Subjective Symptoms.*—Certain leading subjective symptoms demand brief mention. In every instance the presence of other etiologic factors must be considered, for the heart weakness present may be a secondary development. Under thorough examination and a complete anamnesis the danger of error in interpretation is relatively slight and, furthermore, *the need and value of attention to the heart is often underestimated in secondary associated myocardial insufficiency.*

*Fatigability.*—One of the two most important, if not the chief, of all subjective symptoms encountered in this elderly group of insufficient hearts is an inability, gradually, rapidly or suddenly induced, to perform without conscious ex-

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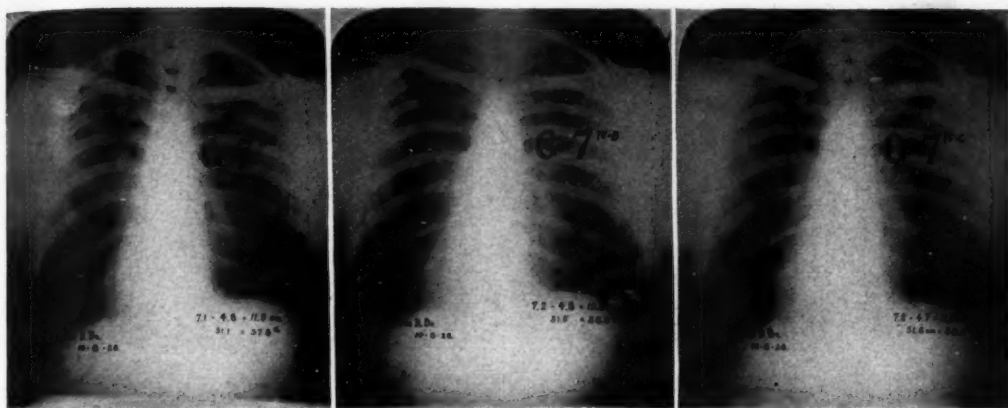


Fig. 1. Three consecutive plates taken to demonstrate accuracy of technic. Note very small (1 millimeter) difference in diameter of the three plates.

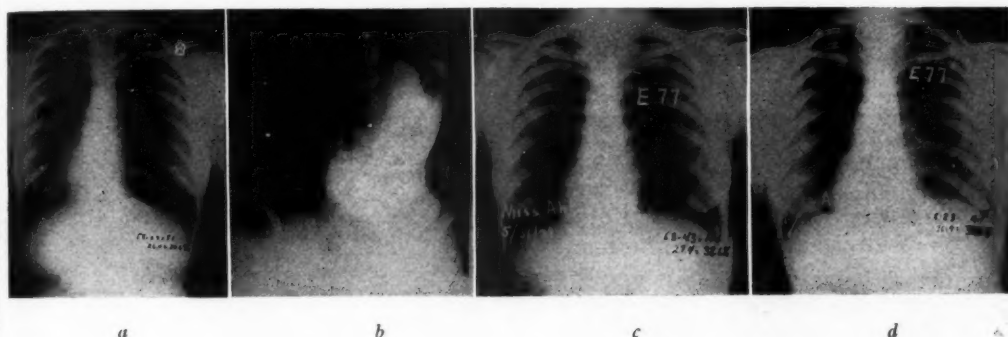


Fig. 2. *a*, Toxic drop heart. Recent hyperthyroidism. Reserve still impaired but improving from week to week. Metabolism normal. Tachycardia moderate. Note shot marking nipple. Note fall of midclavicular line. Heart diameter could be doubled by dilatation and yet be called normal in size under prevailing methods.

*b*, Stomach, same case as *a*, gastroptosis marked. Usual finding. "Effort syndrome" type.

*c*, Masked dilatation. Tonus impairment in excessively nervous young woman. Chief complaint epigastric pain of eighteen months' duration initiated by work or study. Has abnormal fatigability and oppressed breathing when walking in wind. Soft systolic bruit at apex of so-called "accidental" or "functional" type—not transmitted to axilla or back. Note where midclavicular line would fall, far outside left border. Total transverse diameter only 10.6 cm. Previous diagnosis "cardiac neurosis."

*d*, Same patient as in *c* after short ambulatory treatment. Total transverse diameter 9.1 cm. Reduction in transverse 1.5 cm. with loss of right border bulge and assumption of drop heart outline. Patient freed from all subjective symptoms. Heart undoubtedly still abnormally large. Note where midclavicular line falls. Type of case greatly neglected. Genuine dilatation and decompensation masked by small heart and pronounced "nervous" symptoms.

tra effort or fatigue, usual and everyday tasks formerly easily dispatched.

Aside from the undue or excessive fatigue or actual exhaustion which constitutes the main symptom, there are many interesting and important variants. Such are—"heaviness" of the legs; recurring, usually transitory, instability of gait; the sensation of opposed advance in walking, i.e., "wading" sensation. Transitory numbness and tingling of the extremities is especially common in hypertension cases.

A permanent sense of fatigue such as is mentioned in connection with one of the films shown, is a rather common symptom of decided value.

**Dyspnea on Exertion.**—This is a symptom of great importance, but must be carefully scrutinized always both with respect to the existence of etiologic factors other than the heart and the question as to whether the respiratory discomfort really is induced with undue readiness or by a normally insufficient cause.

It is interesting to note that active dyspnea is

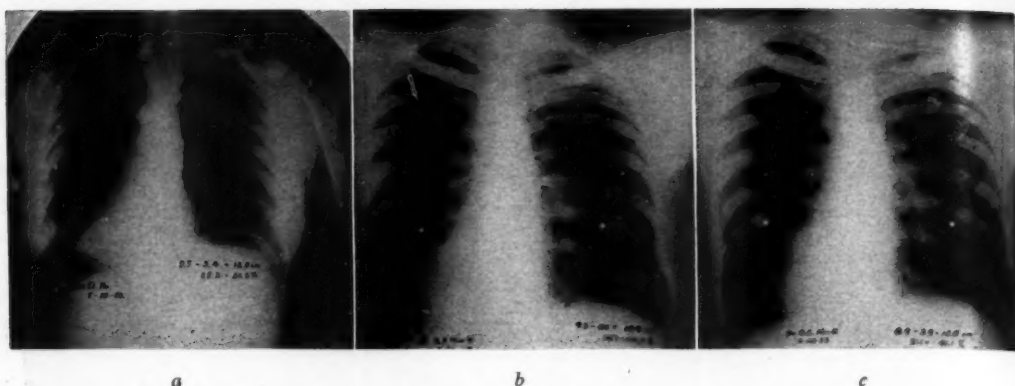


Fig. 3. *a*, Toxic myocardial insufficiency and marked cardiac enlargement. Scarlet fever, diphtheria and frequent tonsillitis in childhood. Influenza four years ago. Pyorrhea and septic tonsils now. Weakness, dyspnea on exertion and "indigestion" for past year since injection treatment for hemorrhoids. Precordial oppression. Highly neurotic. Undergoing hospital regime and eradication of foci. No murmurs. Wholly "silent heart." Type of case usually deprived of merited cardiac therapy and management through diagnosis of cardiac neurosis. Heart pathologically enlarged both to right and left.

*b*, Adult male. So-called "effort syndrome." Masked dilatation of drop heart. Symptoms of defective tonus and myocardial exhaustion plus troublesome precordial pain and palpitation. Regarded as neurotic. Total diameter 13.9 cm. Question of enlargement or non-enlargement. Patient had been told repeatedly that heart was normal.

*c*, Same patient as in *b* after five days' complete rest plus digitalis. Total heart diameter 12.8 cm. Reduction 1.1 cm. Could not take treatment. Heart will resume old outline in a few days. Reduced diameter and tonus improvement not being "fixed" by systematic regimen.

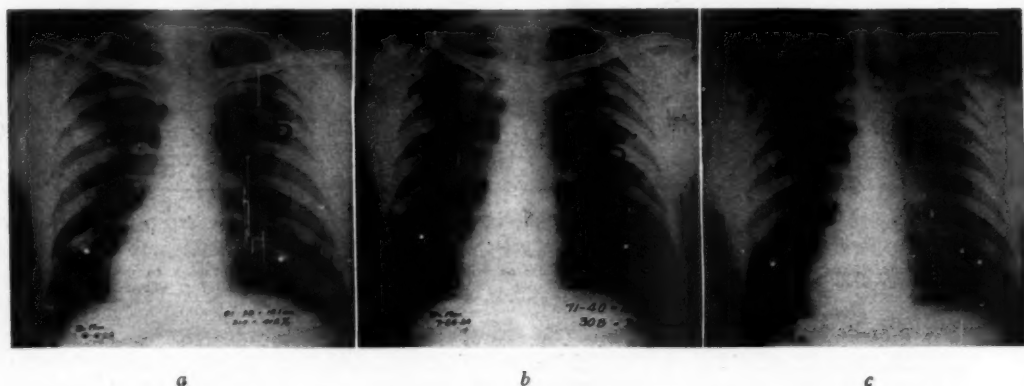


Fig. 4. *a*, Cardiac dilation and toxic myocardial insufficiency with aortic relaxation in viscerotropic male of 31. Complained of lack of endurance, fatigue and fatigability, palpitation, failure to regain strength after thyroidectomy 6 months ago. Diameter 12.9 cm. First symptoms precordial pain radiating to left scapula and left arm and fatigability 18 months ago. Blood pressure 108/66. Faint aortic diastolic murmur. Basal metabolism before operation said to have been +5, after operation -7.

*b*, Same patient as in *a*, 4 months later, after hospital rebuilding regime. Submucous resection and exenteration of left ethmoid cells 3 months ago. Walking 4 miles daily and free from symptoms. Total diameter, 11.1 cm. Reduction 1.8 cm.

*c*, Same case 19 months later. Patient has carried on practice of dentistry for past 13 months without symptoms. Total diameter 11.5 cm.

often lacking during the act responsible for its appearance but marked, immediately thereafter.

Abnormal inability to hold the breath is a symptom of some importance and the peculiar subjective sense of dyspnea, too often ascribed to hysteria, is a symptom commonly undervalued or wrongly interpreted.

**Gastro-intestinal Symptoms.**—An astonishing number of "dyspepsias" disappear under rest and

digitalis and flatulence is common as an associated symptom of myocardial insufficiency in this group.

Precordial discomfort in the presence of gastric distension is peculiarly and suggestively frequent in elderly heart patients. Apparently, an insufficient heart is often irritable and especially protestant against crowding and displacement. The symptom becomes a suggestive



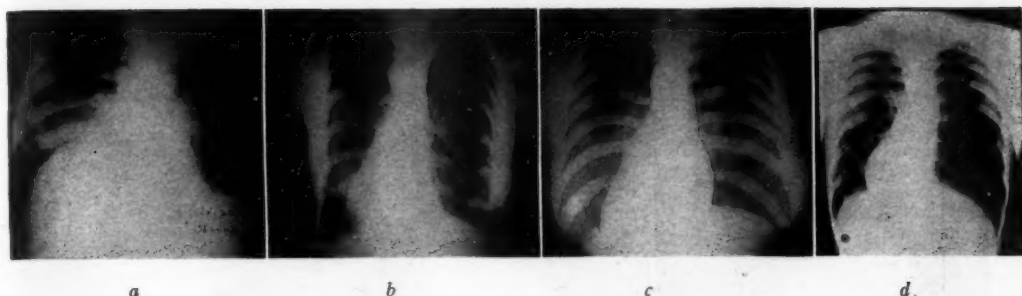


Fig. 5. *a*, Silent decompensation. Case of extreme, apparently terminal, decompensation; exertion dyspnea, orthopnea, general edema with extreme ascites, hepatic engorgement and passive congestion of the kidneys. Abandoned as hopeless by attending physicians. Prompt response to rest, stimulation and systematic retraining. May live in comfort for years. Heart dimensions are M. L. 16.3 cm., M. R. 7.4 cm., total 23.7 cm. This case illustrates a widespread and deadly pessimism with respect to advanced heart cases, no less fatal than the optimism which leads to an unjustified dependence upon nature and robs the cardiopath of treatment during the amenable stages of his ailment. A surprising number prove responsive to systematic treatment and stable under subsequent check and direction. Marked hypertrophy and dilatation accompanied by gross symptoms of decompensation.

*b*, Silent decompensation. Compare this heart with that shown in *a*. The total transverse diameter is but 10.8 cm, yet the heart is greatly enlarged. Dyspnea on exertion, profound fatigability, orthopnea and intervals of Cheyne-Stokes breathing were present. A toxic exhausted myocardium in the heart of a congenital asthenic. Improvement will be slow; the retraining of the heart after removal of existing sources of toxemia will require several months, and probably some reserve limitation will persist. The patient nevertheless may be comfortable, happy and able to lead a practically normal life. This is the type of heart almost universally unrecognized clinically at the present time. Typical example of so-called "effort syndrome" heart, a most unfortunate term.

*c*, Aortic and double mitral of long standing imperfect compensation. Typical textbook outline. Compare diameter with that in *d*. Heart diameter 14.5 cm.

*d*, Patient 29 years of age. Diameter 9.1 cm. + 3.2 cm. = 12.3 cm. (42 per cent of chest). Heart disease 10 years. Double mitral and double aortic. Dyspnea on exertion. No edema. Diastolic thrill in aortic region and presystolic in mitral region. Excessively limited reserve. Not out of own yard in ten years.

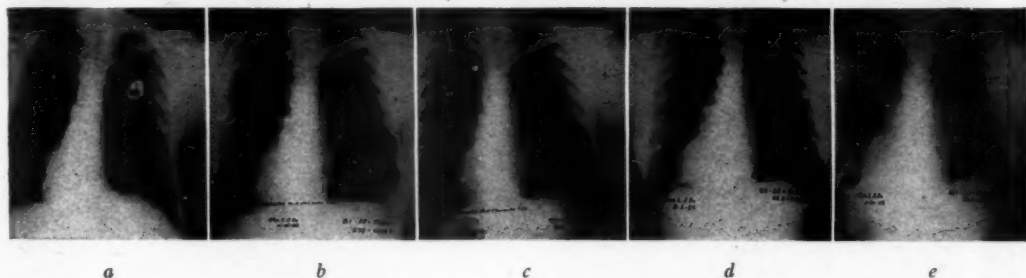


Fig. 6. *a*, Aortic regurgitation. Classical signs, marked decompensation. Death a few weeks later. Diameter 12 cm. Note drop type of heart and astonishingly small diameter.

*b*, Typical case of dilated drop heart with marked decompensation and decided dilatation. Total transverse diameter is but 11.8 cm. Left border within midclavicular line. Soft apex bruit of so-called "accidental" type. Dilatation definitely suggested by low position of stomach. Such hearts are constantly passed as normal.

*c*, Same case as *b* after hospital treatment and full recovery of compensation. Total diameter 9.9 cm. Reduction 1.9 cm. Disappearance of definable right heart border and assumption of typical drop heart outline.

*d*, Same patient. Decided enlargement of cardiac diameter by 2.1 cm., presumably a sequence of recent pregnancy and delivery. Slight recurrence of bilateral edema.

*e*, Same patient. Still maintaining increased diameter but free from all symptoms. Note this fact, that pathologic enlargement has not induced actual decompensation in the retrained heart.

one in the light of the fact that the normal heart makes little complaint even if abdominal distension be marked.

**Precordial Pain and Distress.**—This topic is too large to permit anything approaching adequate discussion. Pain of cardiac origin may vary from a mere sense of discomfort, weight,

crowding, or oppression, to the vice-like, gripping of major angina pectoris. It may be, and usually is, precordial, but is often epigastric and may radiate to the arms, especially the left, the jaws and even to the entire upper abdominal zones.

Pain in the arms, unrelated to the occurrence of precordial angina, is a relatively common

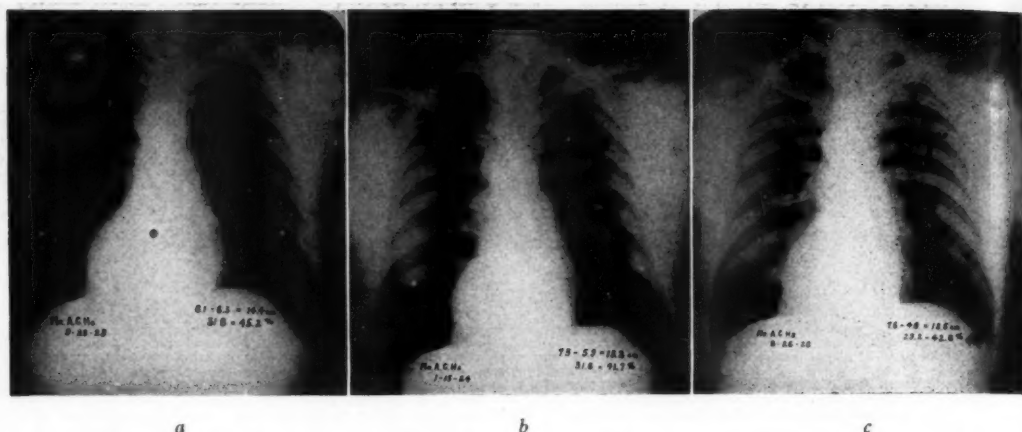


Fig. 7. *a*, Decidedly enlarged heart (right and left) of elderly well developed male with precordial pain, easy fatigability, and dyspnea on exertion. Had several attacks of typical angina pectoris in past year. Frequent respiratory infections. Moderate hypertension. 165/90. Slight bilateral edema. Note the apex is within the midclavicular line despite the decided enlargement and marked decompensation.

*b*, Same case after systematic cardiac rebuilding regime with relief of symptoms. Note reduction of 1.2 cm. in cardiac diameter. Heart apex is far within midclavicular line. Reduction of both right and left borders.

*c*, Following repeated minor overstrains, physical and emotional, associated with slight reaccession of symptoms and slight cardiac enlargement, a second hospital regime was advised, resulting in the acquisition of a further marked improvement in endurance and heart balance, and a further reduction in cardiac diameter which has been maintained. Total period of maintained improvement, four years. Total reduction 2.1 cm. Blood pressure unchanged.

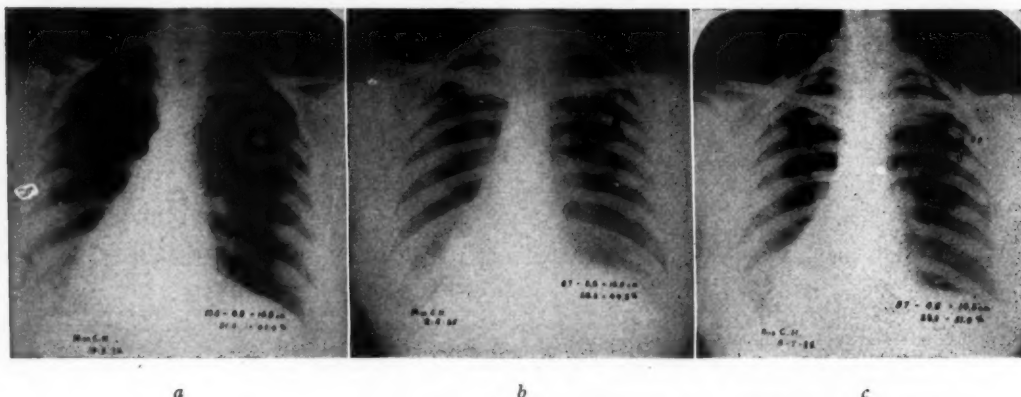


Fig. 8. *a*, Moderate cardiac enlargement in middle aged female. Rheumatic mitral insufficiency with decompensation. Occasional dyspnea since rheumatism at 14. Precordial pain, increased dyspnea, nausea and vomiting of 5 months' duration. Surgeons refused to operate for uterine fibroids because of condition of heart. P. M. I. palpable at that time 14.6 cm. to left of median line. Evident wide dilatation present. Plate taken 2 months after entrance to hospital when patient had gained sufficient strength to undergo x-ray.

*b*, Four months later. Additional diminution of cardiac diameter 2.4 cm. after necessary long, tedious cardiac rebuilding regime. Free from distress. Tonsillectomy advised and successfully performed.

*c*, Cardiac diameter increased 1.8 cm. but patient has felt fine. Free from symptoms. Reporting back at 3 months' intervals

symptom as a delayed sign of reaction to overstrain in patients of the elder group with decided decompensation.

**Drowsiness and Disturbances of Sleep.**—Day drowsiness, persistently recurrent and often most embarrassing, is a not infrequent symptom of myocardial inadequacy, apart from changes

in the vascular system. Allied to this is the loss or impairment of the power of sustained mental concentration or the occurrence of actual mental confusion.

Early waking, unrefreshing sleep, disturbing dreams and the like, are common symptoms, especially in the elderly and, like vertigo, may occur

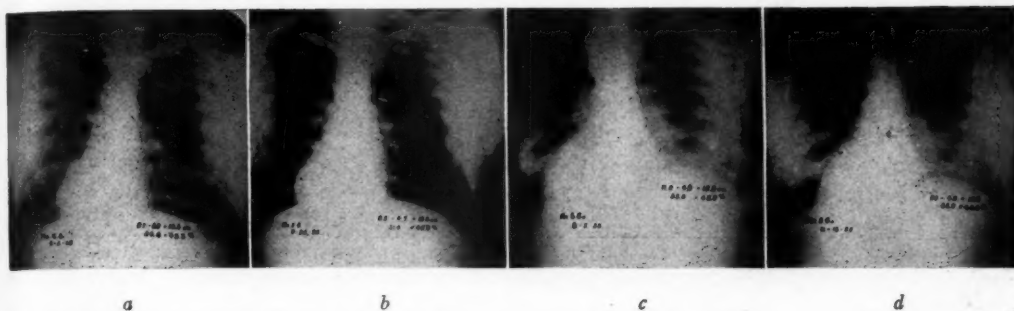


Fig. 9. *a*, Dilated drop heart with toxic insufficiency in male of 47. Collapsed during nasal operation and placed immediately in our care 3 months before it was possible to take this plate. Had had dyspnea on exertion, fatigue, precordial pain, extrasystolic arrhythmia for one year preceding his report for operation. Congestion of lung base on right. Heart tones almost inaudible. Blood pressure 96/65. Percussion dullness 15.5. Soft apical systolic bruit not transmitted, "accidental type," practically silent heart. Relatively common and treacherous type. Septic tonsils. Total diameter at this time 13 cm.

*b*, Same case. Diameter 3 months before this picture was taken, 13 cm. Had pneumonia 2 months ago. In bed for one month. Now feels fully recovered from pneumonia. Diameter now 13.3 cm. Remnant of enlargement in right heart an interesting feature together with prompt recovery.

*c*, Toxic myocardial insufficiency. Acute cardiac overstrain and collapse 8 months ago with marked cardiac enlargement. Prior to collapse the patient had been continuously tired for 2 years. Rheumatism at 14. Diameter 15.9 cm.

*d*, Same case as *c*, 27 months later. Hospital care impossible. Home treatment under difficult conditions. Heart shrinkage 2.9 cm. Going to office and walking a mile daily. Slight precordial discomfort persists. At this date the heart maintains diminished diameter and is free from symptoms. Total diameter 13 cm.

in the absence of marked changes in the cerebral blood vessels.

It is impossible, even with so generous an allotment of time, to discuss disturbances of pulse rate and rhythm further than to say that, in general, these are under-rated as parts of the clinical picture in the elderly group.

The tendency to classify as "functional" or "accidental" all minor apical heart murmurs, unassociated with a classical transmission or symptoms of gross heart enlargement, is especially unfortunate for the cardiopath of the elderly group whose bruits are so often imperfect even when not wholly absent and the failure to extirpate when possible all sources of chronic or recurrent toxemia, is a potent source of failure in the treatment of all chronic decompensated heart lesions.

Our unfilled obligation lies chiefly, but not wholly, in the direction of earlier diagnosis, for we have much to learn with respect to the management of myocardial insufficiency after its detection.

Restoration of impaired reserve may demand only wise counsel and the proper regulation of habits, physical and mental exertion and diet.

Ambulatory treatment under proper direction and regular observation may be sufficient in minor insufficiencies, or, a period of absolute rest may be indispensable, succeeded by a re-

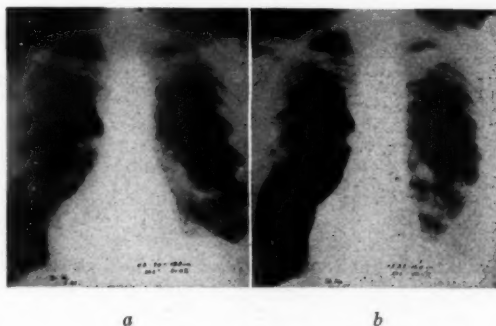


Fig. 10. *a*, Silent heart. Patient, 59 year old male with profound decompensation. Rapid fibrillation thought initiated by physical overstrain 2 weeks previously. Acute glaucoma. Stupor alternating hallucinations. Apparently terminal case. Heart practically silent. Total transverse diameter on admission 18.3 cm.

*b*, Same case after hospital rebuilding regime. Diameter 16 cm. Reduction 2.3 cm. The normal rhythm was re-established and the patient was free from all symptoms. For nearly 4 years now he has been putting in full time in his medical practice and was still free from symptoms in the spring of 1926. It was impossible to keep him under proper observation. Serious breakdown reported later.

sumption of physical activity most carefully graduated and so planned as to make each added increment of effort a stimulus to myocardial tonus.

A common error is that represented by an over-long enforced period of absolute rest followed by too abrupt a resumption of exercise.

Accretions to reserve are gradually attained and oftentimes peculiarly unstable. To fix them

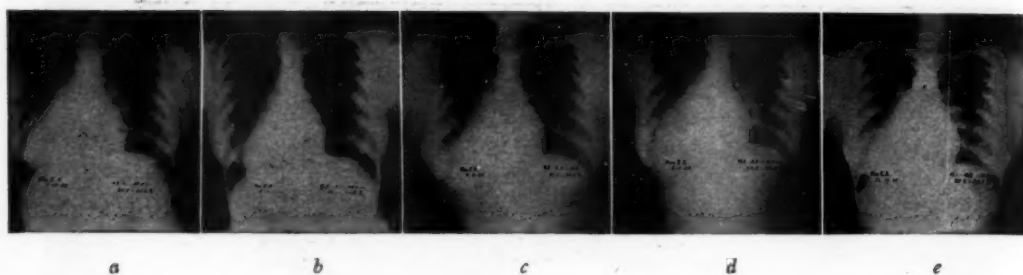


Fig. 11. *a*, Symptoms of decided decompensation for 12 years. Apparently a terminal case on admission. General anasarca orthopnea, etc. Double mitral and regurgitant tricuspid lesions. No fibrillation shown by electrocardiograph. Total heart diameter on admission 17.4 cm.

*b*, Same case. On discharge 14.3 cm. Total shrinkage 3.1 cm. affecting whole heart. Patient discharged free from all subjective symptoms. Walking 4.5 miles and climbing 105 stairs daily. Residual diameter represents a markedly hypertrophied drop heart with good tonicity and adaptive dilatation. Left border at midsternal line. Home conditions most unfavorable on account of "hard times."

*c*, Same case two and one-half years later. Delivery of full term child 4 months previous. Cardiac irregularity for one and a half days in third week post partum (probably fibrillation). Note increase of 1.3 cm. in cardiac diameter as would be expected.

*d*, Same case 7 months later. Three weeks ago the patient had severe influenza which precipitated auricular fibrillation. Heart diameter increased 0.8 cm. over previous film.

*e*, Same case 7 months later. After 3 months of hospital treatment. Entered with cardiac diameter of 16.5 cm. Reduction 0.9 cm., still fibrillating. Recently health reported as good.

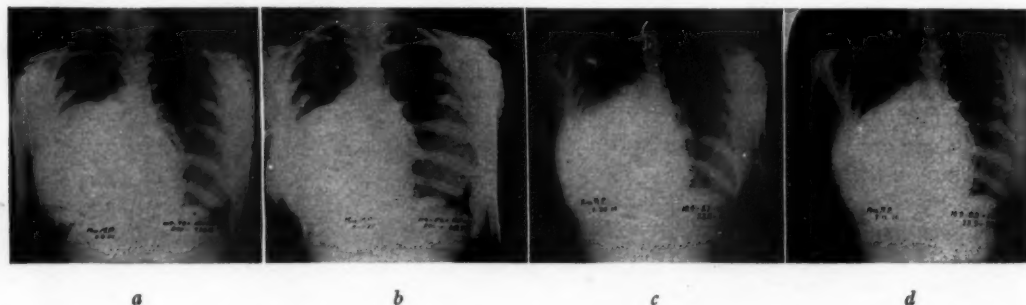


Fig. 12. *a*, Hypertrophied and dilated drop heart with chronic valvular disease. Young woman aged 24, invalidated by chronic decompensation since age of 12. Rapid fibrillation of long standing present on admission to hospital. Decompensation extreme. Double mitral lesion with tricuspid leakage and probable pleuro-pericardial adhesions. Heart diameter 18 cm.

*b*, Same case after period of absolute rest followed by gradual and strictly regulated retraining and rehabilitation of heart muscle through graduated and progressively increasing exercise. Free from all subjective symptoms. Total heart diameter 16.5 cm. Reduction 1.5 cm. Shrinkage wholly in right heart. Rhythm almost normal, rate moderate. Slow fibrillation revealed by electrocardiograph. Walking 4 and 5 miles and climbing 150 stairs daily. Improvement continues.

*c*, Three years later. Living a moderately active life with the avoidance of severe fatigue. Able to travel widely. Slight further reduction in cardiac diameter.

*d*, One year later. Leading a practically normal life. Feeling well and helping with light household duties. Heart diameter increased 1.0 cm. Caution given. Spent summer on Atlantic coast. Cerebral embolism at time of return. Now recovering. Two years later completely recovered.

one must avoid over a long period, in many instances, any effort associated with or followed by a decided consciousness of fatigue.

*"Trying out" a patient is often a most disastrous procedure.*

In and of itself the mere presence of a cardiac bruit or arrhythmia does not establish the need of active treatment.

The loudest of murmurs may be associated

with full compensation and arrhythmias must be identified and dealt with according to their individual nature and their effect upon the heart and sometimes the *psyche* of their possessors.

It is a far cry from the harmless "sinus arrhythmia" to "fibrillation," "flutter" and "heart-block."

At this time we are recognizing but a tiny fraction of the minor decompensations and dila-



tations of this elderly cardiac group which are danger signals and forerunners of calamity.

*Our plain duty, at present unfulfilled, is the earlier detection of reserve impairment, the removal of existing sources of myocardial toxemia and the timely, rational and maximal correction of remediable myocardial inadequacy.*

## DISCUSSION

DR. G. D. HEAD: I wish to express my appreciation of again hearing Dr. Greene in this to him familiar field which he knows so well. I want to emphasize, as he has done in two or three places in his address, the importance of our profession more clearly recognizing this symptom-complex in a very baffling type of cardiac symptomatology. Sometimes I feel, in the study of the so-called neurasthenic type of individual which is so well represented in a group of these cases, that it would be much better for the profession had we never used or recognized such a term as "neurasthenia." I feel that neurasthenia as a diagnosis leads to so many incorrect conceptions upon the part of the clinician. It offers an opportunity of making a diagnosis without making it. Neurasthenia is too loose a



Fig. 13. *a*, Silent heart. Middle aged business man, congenital asthenic type. Former pulmonary tuberculosis long (30 years) arrested. Seen in four typical attacks of acute dilatation. Two followed physical overstrain and two major surgical operations. The latter two associated with wide dilatation and extreme, apparently terminal, myocardial weakness. Typical "soldier's" heart in civilian, "effort syndrome." This plate taken when patient was under ambulant treatment for slight decompensation and attending to a large business. Total diameter 13 cm. Heart greatly enlarged. Note where midclavicular line falls.

*b*, Same case after prolonged hospital treatment, following wide dilatation associated with major surgical operation. Drop heart type shown in both instances. Total reduction 2.6 cm. For six years since this picture was taken the patient has been leading an active outdoor life. He recently completed a trip around the world associated with great hardship and serious acute tropical infections.

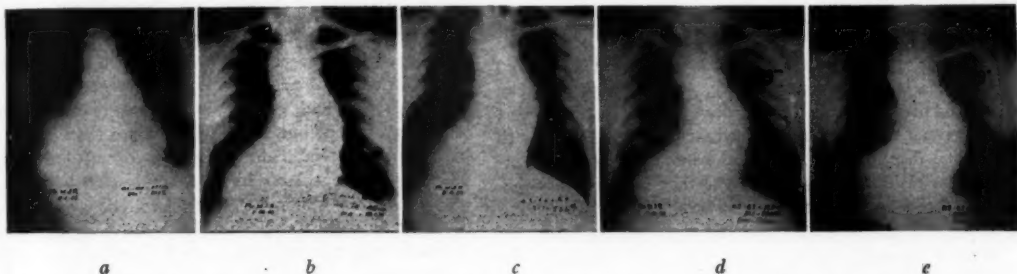


Fig. 14. *a*, Luetic heart and aorta. Thirty year old male. Complained of dyspnea, precordial constriction and oppression since influenza in 1918. An ambulant patient attending to his business, who reported because he had been feeling worse in previous 3 weeks. Chancere at 17, no treatment. Heart diameter on admission 23.5 cm. Normal rhythm.

*b*, Same case after 3 weeks. Hospital regime but no antiluetic treatment. Total diameter 18.5 cm. Reduction 5 cm.

*c*, Same case two and one-half months later under ambulatory cardiac regime plus anti-luetic treatment. Cardiac diameter 16.9 cm. Total reduction 6.8 cm. Note the evidence of the disease of the aorta itself.

*d*, Same case 4 months later. The cardiac diameter increased 1 cm., after trip during which patient felt well. Symptom-free on careful avoidance of overstrain.

*e*, Same case three and two-thirds years later. Free from severe pain. Carries on active business. Uses careful self-protection. Cardiac diameter 18.4 cm., a negligible increase for this case.

term to be used in diagnostic nomenclature among scientific men. It should be abandoned.

I think that Dr. Greene, particularly, has taught many of us the very great importance of recognizing this exhaustion type of clinical syndrome which is so closely allied to and associated with this form of myocardial insufficiency which he has so well demonstrated for us tonight.

I could talk more about many of the phases which I am particularly interested in, but I feel I want only to express my appreciation of this splendid presentation.

DR. C. B. WRIGHT: I would like to express my appreciation of the very great privilege it is to have heard Dr. Greene. There is nothing more difficult, it seems to me, than to evaluate to any degree of exactness the efficiency of a patient's myocardium, yet we are frequently called upon to do this. First, we must discriminate carefully between fatigability and myocardial insufficiency. It is true that all cases of myocardial weakness are easily fatigued but it is not true that all cases that are easily fatigued should be classed as myocardial insufficiency. The same may be said of a case of anemia, infection, or constitutional disease.

In other words a cardiopath is a patient whose trouble is due to some pathological change in the heart. Many clinicians are accepting the classification of heart disease championed by Dr. Thomas Bell: (1) heart disease due to endocarditis; (2) heart disease due to hypertension; and (3) coronary sclerosis. To be sure there are other causes, how important they are is still an open question. \* As Dr. Greene has said, the x-ray is the most reliable method of all in determining cardiac pathology, except in the early coronary cases. Here the history and observation of an attack are diagnostic. In determining the functional limitations of these cases, response to exertion is the easiest and most reliable test. Changes in vital capacity is a very valuable test in these cases and is especially helpful in eliminating non-cardiac conditions. Gastro-intestinal symptoms are early and often misinterpreted, as Dr. Greene has stated. Edema I would class later along with cough, basal râles, and liver enlargement. To sum up, the proper handling of these cases depends on: (1) one's ability to separate the cardiac from the non-cardiac; (2) to determine as accurately as possible the functional capacity of the heart; (3) to properly control the activities of the patient; (4) knowledge of when to use and how much to use of drugs, principally digitalis.

DR. T. F. AVERY: This has been a great treat, and it covers the ground so fully that there is not much to add. I have found in my own work that there are a great many cases of myocardial weakness not recognized. If we are on our guard we would find many hearts slightly decompensated, and I think we can benefit these patients a great deal. I feel that we ought to give as much intelligent care to the man with cardiac disease as we do to the one with acute appendicitis. We should never feel that a patient is beyond hope until he is carefully studied and painstaking treatment given. Some physicians rest patients too much and some don't rest them at all. After the flu epidemic there was a large group of people with weak hearts. Most of this group can be benefited under careful supervision, proper rest, tonics, restricted exercise, etc.

(Closing):

Dr. Eleanor Hill asked about slight dyspepsia with much flatulence and with apparently no heart disturbance; whether that is an early sign.

DR. GREENE: I find in a great many instances that dyspepsia is quite a prominent associated symptom of slight decompensation or sometimes decompensation that is more than slight, in the older group especially. It is a difficult symptom to evaluate primarily until tested by rest and cardiac stimulation. As I said in my paper, even a considerable degree of gaseous gastric distention ought not to affect the heart, if normal, and when it does so affect it you are probably dealing with one of those irritable hearts that bespeak chronic myocardial defect. It rarely or never would be encountered as the sole symptom, but is often obscurely dominant.

DR. JULIUS JOHNSON: I think Dr. Greene mentioned emotional factors among the causes. How important do you find that factor to be?

DR. GREENE: I have been more and more impressed by the importance of the emotional factor in the production of heart symptoms in established myocardial insufficiency and with that has come an increasing conviction that sustained, severe mental overstrain is almost as exhausting to an impaired heart as is physical labor. It is a very difficult question that you have put, but that is my feeling in regard to it, and recently I am encountering more and more cases in which this seems to be a factor of importance.

DR. ERB: What is your opinion in regard to overstrains in young athletes, about the age of 18, or in the developmental years; for instance, running until they just drop almost exhausted.

DR. GREENE: I do not think it is a good thing. I should say it ought to be a question which depends in a considerable measure on the position of the stomach and the type of heart. There are boys whom it won't hurt at all. They apparently are knocked out by it but come back promptly and sustain no harm. This visceroptotic (congenital asthenic) type, however, that attracted my attention on the cardiac side some fourteen years ago, oftentimes can't do it safely. There are all grades. Some of them have remarkably strong hearts, and some *never* have had any considerable myocardial reserve.

We meet, in our case-history taking, such interesting instances with respect to individuals who all their lives have sheltered themselves from over-exercise; boys who can't play with other boys in the way those youngsters play. You find also a type where there seems to be an intermediate degree of myocardial strength. The youngster protects himself but is able to do some of the things. When he goes to college he keeps out of violent athletics, either consciously or unconsciously. When he chooses his life work he protects himself.

Then again you may have an individual who carries a visceroptotic physique and yet seems to be able to do anything you or I can do. You have to classify these cases and recognize the existence of wide variation in myocardial reserve, congenital and acquired.

Another thing I might add—in many instances you see very interesting examples of a type, which I may say constitutes half the population of the United States, who are all right as long as their nutrition is good or super-good, but if anything happens to knock that down, they are quite unfit for athletics until the high level is restored.

DR. ROAN: Is there such a thing as "athletic heart"?

DR. GREENE: That is a particularly hard question to answer. I don't believe there is, in the old sense of the word. I do think it is quite possible and very common to have most troublesome hearts in individuals who have carried on athletics in an improper way, or perhaps with a constitutional build that should have kept them out of the more strenuous forms.

I might have shown you tonight a film I have always

valued as it was so typical an example of crossed inheritance in a young man. He was particularly anxious to go to the front along athletic lines. I could have told him beforehand that he should never have attempted it. His mother was a magnificent creature, Juno type, and came of a family particularly fitted for athletics. His father came of stock which was of an entirely different type, i.e., the asthenic and visceroprotic order. The boy inherited his father's heart and the mother's body musculature and osseous structure. I think there are many instances where hearts are of that nature (misfits through crossed inheritance). Twice I have had to take such men out of the great eastern rowing crews.

I did want to say a word in regard to the hearts of old people. I think my sympathy goes out more to our old, "failing" men and old women than to any other type of individuals I know of. Stop and think for a moment about the attitude of mind people hold by tradition toward them and their hearts. A cherished and beloved old gentleman or old lady begins to grow weak, unable to do without discomfort or exhaustion, this, that or the other thing which he or she formerly has done with ease. The clock begins to run down. That is looked upon as a physiologic process and of course in a measure it is, but we almost inevitably confuse the physiologic and the pathologic, and allow a case which is actually a heart-case by its pathology to go absolutely unattended and unrelieved. I see many, many instances of the astonishing effect of a little regulation or systematic treatment in improving the condition of people who were simply regarded as the victims of senility. It is an interesting fact, as Dr. Councilman has said, that 50 per cent of all hearts of people over 60 show hypertrophy at autopsy. Now we practically abandoned the idea of so-called work hypertrophy and if hypertrophy exists in such a high percentage of cases of that age, we must believe that it was due to disease processes, i.e., that these hypertrophies are the results of toxemia (repeated or continuous over long periods) with consequent more or less unconscious overstrain of varying degree and duration.

It seemed to me as I read that statement of Councilman's that it explained another thing which had puzzled me. I have read expressions of opinion by some of the most eminent authorities in the world to the effect that a heart in a person of 60 can be 15½ cm. in diameter and be normal. I have never met such an instance, never. I thought that perhaps this statement of Dr. Councilman went a long way to clear that up. That must be the average diameter covering a very large number of cases, many being abnormal, but lacking gross symptoms of myocardial insufficiency.

We have a lot of things to clear up along the line talked about here tonight and the matter is, as has been said by Dr. Wright, a difficult one to present. I shall be very glad if I have done what I tried to do to help in clarifying the question of earlier diagnosis.

## A STUDY IN OTITIC SINUS THROMBOSIS\*

CHARLES D'ARCY WRIGHT, M.D.  
Minneapolis

Otitic sinus thrombosis originates by direct extension to the sinus from an otitis media or by way of the mastoid. I am considering today direct bulb thrombosis as a lateral sinus thrombosis.

Bulb thrombosis may come directly without the mastoid involvement:

1. From dehiscence in the floor of the tympanic cavity, due to close proximity to the bulb.
2. From extension of infection of the carotid plexus in the middle ear directly to the bulb from the middle ear.<sup>1</sup>
3. From the middle ear by a suppurative labyrinthitis through the internal auditory vein to the bulb (osteothrombotic phlebitis).<sup>2</sup>

Nearly all sinus thrombosis comes through the mastoid to the lateral sinus.

The germs of infection are various, the common ones being the streptococci and staphylococci, tubercle bacilli, and pneumococci, especially type III (nonhemolytic).

### CLINICAL SYMPTOMS

The clinical symptoms of sinus thrombosis are chills followed by high temperature, sweats, and remission of temperature with considerable prostration. The stomach is irritable and there is often vomiting. The headaches, while often severe, are not the nocturnal temporal headaches which characterize extradural abscess. Petechial hemorrhages, progressive prostration, loss of normal blood picture, changes in the spinal fluid and metastatic suppuration are also present.

Except for metastatic suppuration all of these symptoms are generally present.

### BLOOD PICTURE

In lateral sinus thrombosis of the variety which starts extravenously, the blood picture is not so materially changed. The hemoglobin and the red blood count are not much reduced and this is a most important point.

The white cells in all acute infections of the middle ear and adnexa show an increase in poly-

\*Read before the staff meeting of the Lakeside Methodist Hospital, Rice Lake, Wisconsin, June 21, 1927.

morphonuclear cells; yet it is not the number but the ratio that is important. The increase in the total number of cells indicates that the body forces are meeting the toxic products which are being absorbed. The number of polynuclear cells indicates the amount of toxic material absorbed.

In the variety of sinus thrombosis which starts intravenously in the small vessels of the mastoid mucosa, the cause is always or nearly always hemolytic streptococcus. The hemoglobin drops rapidly and persistently and the red blood count drops proportionately. Red blood cells are being destroyed by hemolysis. So constant and reliable is this sign that it will establish a tentative diagnosis between the two varieties when laboratory research is not possible.

#### BLOOD CULTURES

Positive blood cultures are found in somewhat over one half of the cases of sinus thrombosis. There are several reasons why the percentage is so small.

When the infected emboli are carried to the lung, there may be infection only of the pulmonary circulation. Other infected foci may be quite walled off by surrounding granulations and not produce general blood stream infection.

I place little weight on negative blood cultures.

#### SPINAL FLUID

The observation of the spinal fluid is of great aid to us in otitic complications. It should always be carefully observed in all chronic otitic infections before any operative procedure. Recent study of quantitative sugar and chloride determinations in the cerebro-spinal fluid during acute purulent meningococci meningitis when specific serum therapy is being given indicates that the specific serum increases the sugar and also the chloride content, yet that the chloride estimation gives no diagnostic or prognostic information.<sup>9</sup>

**Pressure.**—Meningitis serosa, from a circumscribed focus of meningeal inflammation, may set up an inflammatory edema which spreads through the arachnoid and causes marked increase in the pressure of the spinal fluid. This inflammation may subside or lead, after some time, to general suppurative meningitis.<sup>7,8</sup> A marked increase of the spinal fluid pressure should lead to careful examination of its carbo-

hydrate index and the estimation of the presence of choline.

Increased pressure means extra-cranial tension. Any irritability of the meninges will change the clear fluid to a cloudy one. If many bacteria are present, on standing, there will be a coagulum. Blood is often present through accidental venous puncture in drawing the fluid. Pure blood in the fluid in repeated punctures is conclusive evidence of hemorrhage in the meninges.

Increased lymphocytosis only means meningeal irritation and is a favorable sign, except in tuberculous cases.

Polymorphonuclear cells in the spinal fluid are different, however, and strongly point to some suppuration in or near the meninges. They are found in protective meningitis. In protective meningitis when there is an increase in the lymphocytes and a decrease in a previous existing polynuclear count, the outlook is good.

**Bacteriology.**—Smears and cultures should both be made. Of course, positive cultures are not always present when bacteria exist.

The intracellular meningococcus, streptococcus hemolyticus, streptococcus mucosus or the influenza bacillus present in the spinal fluid give an extremely bad prognosis.

**Albumin.**—This means little.

**Globulin.**—Except as an evidence of some irritation the presence of globulin means little.

**Carbohydrates.**—We are indebted to Kopetsky<sup>4</sup> for his discoveries relative to copper reducing carbohydrates in the spinal fluid, and to Donaph<sup>5</sup> who in 1903 reported that decomposed lecithin gave choline in the spinal fluid.

When copper reducing agents are absent and choline present, meningeal suppuration is reasonably certain. This test will show before bacilli can be demonstrated in the spinal fluid.

**Reaction.**—Normal spinal fluid is alkaline or amphoteric. Decided acidity is indicative of meningeal inflammation.

**Cytology.**—Decided increase in the number of lymphocytes is indicative of meningeal irritation. They function to remove debris in the fluid and on the pia and except in tuberculous cases their increase is favorable. Polymorphonuclear cells are different and they are never found except when some suppurative process is mighty close to, or in the spinal fluid. They are abundant in protective meningitis where an extra-dural



abscess is being walled off. It is a favorable sign when the fluid shows a plus polynuclear count which begins to decrease as the lymphocytes increase.

Wassermann examinations should be made on the blood and spinal fluid both and should be repeated, if negative, when the recovery is not prompt.

Operative cases when hospitalized should have a blood grouping as it saves time in searching for a proper donor. When donors have been grouped previously, they should be re-classified. One system should be used throughout, either cell or serum reaction.

Whole blood is superior to citrated blood. Whole blood transfusion replaces hemoglobin, red cells, and supplies new antibodies.

Immunized donors have questionable advantages over non-immunized donors.

#### X-RAY PLATES

The x-ray plate is of great value. X-ray is of greater use in class number one.

I recently had three plates taken inside of fifteen hours and watched in this time the advance of the cellular destruction toward the sinus. This occurred very early and rapidly. We wished to wait for more walling off but could not safely do so. There was an extremely rapid advance of the infected mass toward the sinus.

The x-ray plate is helpful in giving us the proximity to the antrum of the fossa and the lateral sinus. In chronic cases the plate always shows more or less sclerosis. In acute exacerbations in chronic cases the plates are often misleading.

Sinus thrombosis from otitic diseases is a septic systemic invasion.

In cases extravenous in their origin the infection reaches the sinus by a pressure excavation of the tissue lying between the middle ear and the sinus, by way of the mastoid. The infected mass is surrounded by granulations and sometimes, at first, by masses of dense and adherent cholesteatoma. This pressure shuts off the circulation and the bone becomes eburnated. The sinus wall is impinged, the circulation through the sinus is slowed, the epithelial lining of the sinus is injured and the infected mass pushes through the outer wall into the sinus. Thus the three cardinal factors of a thrombus are fur-

nished, namely, slowed circulation, injured epithelial wall and infection. The sinus, when exposed, is found crowded with granulations, and, if reasonably advanced, is solid from the thrombus. In these cases the general sepsis comes late.

Cases intravenous at the start begin by a sepsis in the veins of the thickened mastoid mucosa. This thrombus travels to a larger vein and reaches the lateral sinus by the intravenous route. I believe these are all of hemolytic streptococcus origin even if the organism is not demonstrable. Often the sinus wall in these cases looks normal, aspiration shows red blood, and the vein wall may be a little or considerably thickened (mural thrombus). In these cases the systemic sepsis comes early. It may even come before the mastoid is diseased. In this class also the hemoglobin and red cell count drop far and rapidly.

When one has a double mastoid disease at the same time, it is difficult to tell which side has the sinus complication, especially if the mastoiditis is of the intravenous, number two type. Here the fundus examination will sometimes help to determine. The jugular bruit is not of value to the writer.

Quantitative estimation of the number of colonies of streptococcus of an equal amount of blood from the two jugular veins or from each sinus is rather uncertain as to value. Double mastoiditis is more common in number two class as they very often follow infectious fevers.

#### TREATMENT OF LATERAL SINUS THROMBOSIS

Before surgery of the lateral sinus is attempted, other possible sepsis must be excluded, as meningitis, malaria, etc.

Where after mastoid operation, the sinus wall is diseased, the integrity of the vessel destroyed, or where the sinus is opened, containing pus or thrombus, then the radical sinus operation is indicated if a systemic sepsis exists.

In class number two when no apparent disease of the sinus exists but systemic sepsis follows mastoid operation coupled with a marked reduction of hemoglobin and red cell count, then the radical sinus operation is indicated.

I feel safer to ligate the jugular as the first procedure where in class number one there is a palpable thrombus of the jugular and in class number two, in fulminating cases. The jugular

is very easily ligated with the facial vein as a guide after opening the carotid sheath, and, years ago, I often sewed it in the wound, allowing it to function as a drainage tube.

There has been much discussion whether to remove the thrombus or not. The writer has for thirty-five years followed the following rule:

In class number one the vein is opened and plugged. In class number two the distal end of the thrombus is removed (no matter how far it extends) till fresh blood is obtained.

One asks how the classification was made thirty years ago? The writer then called class number one cases where nature seemed able to help, and class number two cases where nature seemed to be all through. The look of the patient yet gives a decided tentative classification.

In systemic infection from sinus thrombosis once diagnosed, three considerations are vital:

1. Time is the essence of the contract.
2. In class number two with decreased hemoglobin and falling red blood count, whole blood transfusion from a classified donor, and repeated transfusions, are indicated.
3. In class number two, where the hemoglobin does not pick up, more surgery is demanded, as it will show very definite results when the eradication of the infection is complete.

I think that to report mortality following operation, even if it is a good record, is ethical. The writer has operated mostly at St. Mary's Hospital for over thirty years, having done a considerable number of mastoid operations in this hospital, including cases of lateral sinus thrombosis with extradural abscess and protective meningitis including also metastatic supuration, and the hospital records will bear me out that my recoveries have been one hundred per cent.

Not having had a death at St. Mary's Hospital during this period of mastoid operations and lateral sinus surgery, it would take a good deal of scientific reasoning to get me to remove the distal end of the sinus thrombus in class number one or to fail to remove it in cases listed under classification number two.

Outside of the lateral sinus operations, the removal of all diseased tissues in the middle ear and its adnexa, the removal of any extra-meningeal pus, perfect rest, the promotion of excre-

tion of the toxic products, colonic irrigation, the increase of fluid intake in cases not too prostrated, are desirable. Hypodermoclysis has been useful immediately after operations (followed by great prostration) in class number one. In any case of very irritable stomach rectal tidal flow of plain glucose has served me very well.

#### CASE REPORTS

*Case 1.*—A child, aged 9, hospitalized at St. Mary's hospital by the late Dr. James Dunn, in the fall of 1898, gave a history of right otitis media some years back, which healed entirely. Some days before I saw the patient the symptoms were fever, rigidity of the neck, increased deep reflexes, severe temporal headaches at night. The patient was very restless and cried out at night during sleep. A diagnosis of purulent meningitis had been made. As a doubtfully palpable jugular was present, Dr. Dunn allowed me to do a lateral sinus operation. The sinus was thrombosed and a very large extradural abscess was evacuated. The sinus was packed and the pus still continued to drain from the extradural abscess. At this time suppurative meningitis meant death, which was waited for expectantly. The child was placed on the right side so that the meninges might drain. This was one year after Sir Charles Ballance of London, than whom there has never been a keener observer, had first reported drainage of the meninges in suppurative meningitis by the occipital route.<sup>6</sup> As the patient persisted in recovering, I was somewhat elated over the case.

Dr. Dunn, in his charitable way, was wont, when serious cases worried him, to visit poor, old, blind Sister St. Patrick in the hospital to make her a contribution of some gold piece and request her intercession to the Deity for the success of a case.

After the child recovered, I spoke to Dr. Dunn about the case and I shall never forget the remark he made in his inimitable friendly manner. He said, "I am not so sure whether surgery or poor, blind Sister St. Patrick's prayers produced this result."

Of course, this was a case of extradural abscess with sinus thrombosis and protective meningitis, which latter meningitis we could not differentiate from general purulent meningitis at that time.

*Case 2.*—Mrs. M. H., aged 42, hospitalized at St. Mary's hospital December 1, 1904, had an otitis media and mastoiditis. The drum was opened and mastoid operation performed. The patient soon developed a facial erysipelas and later an osteomyelitis of the left tibia. The osteomyelitis of the tibia existed previous to any ear trouble. Dr. H. B. Sweetser, Sr., was tending her general condition and I do not recall who was in charge of the case, Dr. Sweetser or myself.

The patient gave all the symptoms of general bacteremia, with chills, temperature of 102 to 105, followed by great prostration. On my first consul-

tation I advised lateral sinus operation but Dr. Sweetser was rather hesitant owing to the question as to whether the sepsis came from the tibia, the erysipelas or the lateral sinus. Eight days later with continued chills, high temperature and increasing prostration, Dr. Sweetser consented, and I opened the lateral sinus. A large thrombus was found, the sinus was packed, and Dr. Sweetser ligated the jugular vein near the junction of the facial. The distal end of the clot was not removed. The patient made a slow and uneventful recovery and was well fifteen years after this operation.

*Case 3.*—Mr. G. H., Joel, Wisconsin, was hospitalized at St. Mary's, June 23, 1924. The patient gave a history of otitis media of long standing. A diagnosis of mastoiditis was made and a mastoid operation was performed June 25th. The patient did reasonably well until the latter part of June when he began to have chills followed by high temperature, severe sweats and prostration. These symptoms became more exaggerated until July 7, 1924. He had then shown a temperature of 104 and 105 after chills and was very much prostrated.

His hemoglobin, when admitted, was 80 per cent, leucocytes 9,600, large lymphocytes 28 per cent, large mononuclears 2 per cent, polynuclears 70 per cent.

After his mastoid operation his leucocytes increased to 16,400 and on July 7th to 19,000. The polynuclears went to 80 per cent on July 7th, large lymphocytes dropping to 18 per cent. The urine showed albumin and casts.

On July 7th a lateral sinus operation was performed. Dr. James Hayes tied off the internal jugular. The sinus was completely thrombosed and there was a large extradural abscess which was drained. The distal end of the thrombus was not removed. The sinus was packed with triple iodoform roll packing.

The patient developed a large metastatic abscess in the groin about July 15th and several other metastatic abscesses followed, all of which showed a selective affinity for the muscles and joints. The blood cultures were negative. The spinal fluid was cloudy, formed a coagulum on standing and contained a streptococci which was questionably classified as *mucosus*.

The patient was given intravenous injections of mercurochrome every other day in large doses.

For a long while we despaired of his recovery but during the latter part of September, he left the hospital in good condition and a recent letter states that he is very well.

*Case 4.*—P. T., aged 11, referred by Miss Clara Meyman, who nursed Case 3, was brought to St. Mary's Hospital April 18, 1926, and gave a history of otitis media of three weeks' standing following influenza. He had all the symptoms of mastoiditis and in addition, when seen had recently had chills

and a temperature of 106. This had been followed by severe sweating and collapse.

His hemoglobin was 80 per cent, lymphocytes 17 per cent, mononuclears 20 per cent, polynuclears 80 per cent, baso 1 per cent. The urine showed granular and hyaline casts and albumin.

Mastoid operation was performed that day with a lateral sinus operation at the same time. I tied off the jugular just above the facial vein, put in the usual triple pack and did not remove the distal end of the thrombus.

The patient was out of the hospital on the twelfth operative day and a recent follow-up letter states that he is in perfect health.

*Case 5.*—J. W. C., aged 23, male, was seen in September, 1923. The patient had had a severe pain in the right middle ear for three days, followed by chills and some fever. No physician was consulted. The patient was too prostrated to get out of bed and I was called to see him.

He had been a healthy, strong man, had never been sick and never been injured. He had suffered only from what he termed a cold and sore throat which had been followed by considerable desquamation. The desquamation ceased about the time the middle ear began to pain.

Upon examination he was found to have a temperature of 106, severe headaches, pain over the right side of the head with central nervous depression and extreme shock. He could hardly answer questions due to the trembling of the lower jaw. His hemoglobin was 55 per cent and his red blood count was 3,000,000. His spinal fluid was negative except for presence of polymorphonuclears and cloudy appearance. The Wassermann tests on blood and spinal fluid were negative.

At his home the jugular vein was tied off and citrated blood was transfused. The mastoid was opened and found perfectly clear; the lateral sinus was thrombosed and the walls of the veins thickened. The sinus was packed and the distal end was not removed. There was recurrence of fever and chills, decrease in hemoglobin and red blood count, though benefit was obtained by each intravenous administration of blood. On the ninth day following the packing of the sinus, it was reopened and the distal end of the clot removed. The sinus was packed and an attempt was made at whole blood transfusion which was not successful, due to some leak in the tube. Citrated blood was freely administered thereafter and the recovery was complete and uneventful except for a partial paralysis of the third nerve on the right side with some ptosis, divergence, and some dilation of the pupil. The optic disc, while not choked, was extremely congested and the retina was very sensitive to light. The paralysis of the third nerve, I think, was some metastatic process interfering or partially closing the superior orbital fissure, but the fourth and sixth nerves escaped though they rather protect the third in their passage through the sphenoidal fissure.

There was no orbital abscess; at least, if there was, it was absorbed.

This man was extremely ill for a long time. Inspection in April, this year, gives only a slight anisocoria. Both pupils react normally. Cavernous sinus complication may have caused the third nerve paralysis but no other symptom substantiated this presumption.

During the course of the illness, the hemoglobin repeatedly dropped to 40 per cent and the percentage of polynuclears exceeded the white count most of the time until after the distal end of the clot was removed. The blood picture then righted itself very rapidly. The clot was not entirely removed in the first operation due to trepidation in going back to the median line of the occiput. This was an error. 307 Yeates Bldg.

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#### CULTURE OF BACILLUS BULGARICUS

Bulgara Tablets-H. W. & D., Culture of Bacillus Bulgaricus-Lederle, Culture of Bacillus Bulgaricus-Fairchild, Galactenzyme Tablets, Lactampoule, Lactic Bacillary Tablets-Fairchild, and Vitalait Culture of Bacillus Bulgaricus Omitted from N. N. R.

The Council on Pharmacy and Chemistry decided to retain bacillus bulgaricus preparations in New and Non-official Remedies, provided that the claims for these were revised to show such preparations to be of value only in the preparation of soured milk, and, further, that all claims for their intestinal implantation and for their value as external applications be discontinued. The Council reports that the following products have been omitted from New and Non-official Remedies because acceptable revisions of the claims were not made: Bulgara Tablets-H. W. & D. (Hynson, Wescott & Dunning); Culture of Bacillus Bulgaricus-Lederle (Lederle Antitoxin Laboratories); Culture of Bacillus Bulgaricus-Fairchild, Lactampoule, Lactic Bacillary Tablets-Fairchild (Fairchild Bros. & Foster); Galactenzyme Tablets (Abbott Laboratories); and Vitalait Culture of Bacillus Bulgaricus (Vitalait Laboratory of California). (Jour. A. M. A., June 4, 1927, p. 1831.)

## ETHER-OIL-MORPHIN-MAGNESIUM SULPHATE ANALGESIA IN LABOR\*

REPORT ON 100 CASES

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In compiling this short study of obstetric analgesia as secured by the administration of colonic ether-oil with morphine and magnesium sulphate, I have followed the work done in the New York Lying-In Hospital by Dr. J. T. Gwathmey and it is to his articles as they have appeared in the various obstetrical journals since 1923 that I am chiefly indebted for my technical, and historical information—especially the one occurring in the American Journal of Obstetrics and Gynecology in May, 1923, in which he makes his preliminary report.

Aside from sustaining and actually saving life there is probably nothing that is more appreciated by our patients than relief from pain and suffering. From time immemorial those who have practiced the healing art have been called upon to assuage pain. History relates many incidents where people have subjected themselves to all manner of indignities and actual torture in the hope of getting relief from pain and suffering. Hypnotism, mesmerism, inhalation of noxious fumes, weird incantations, administration of foul tasting substances, have all had their trial as hoped for agents to ameliorate pain. It was left to Morton, an American dentist, to discover the first real anesthetic and it was Simpson of Edinburgh, who first used ether to relieve surgical and obstetrical pain. It was shortly after this discovery in 1846 that Simpson discovered chloroform, which soon came into very general usage as an anesthetic in childbirth. Even today chloroform enjoys a high popularity in this field. As early as 1880 the combination of nitrous oxide and oxygen was recommended as a substitute for chloroform as an anesthetic and today this same agent in a modified form undoubtedly enjoys first rank as an analgesic in labor. However, it has the disadvantage of being rather expensive and practically requiring an expert for its successful and

\*Read before the Hennepin County Medical Society, Minneapolis, March 30, 1927.



safe administration. These two conditions make this form of anesthetic unavailable for a large number of child-bearing women.

Twilight-sleep (Scopolamin-narcotin anesthesia) is likewise limited, as it requires an expert and very exacting environment to make it at all successful and safe. Kroenig and Gauss introduced this form of analgesia into this country in 1913 at Chicago, reporting 3,000 cases. They still employ it and very successfully, but, of course, they are experts and have ideal conditions. In this country it has fallen largely into disuse except in a few well equipped institutions where surroundings can be made to suit the requirements and where an exacting technic is developed. It is not without danger.

To come back now to our subject of ether-oil anesthesia. Gwathmey's object was to find a method of relieving child-birth pain which would in no way endanger the life or health of mother and child, would be simple of administration, inexpensive, and in which well standardized drugs only were used, a method that could be used in the home as well as in the hospital, and that would not require the services of an expert in its administration.

The drugs used and their actions in brief are as follows:

The ether-oil retention enema—

Quinine Hydrobromate Gr. xx

Ether 5 11 ss

Alcohol 5 11

Olive-Oil q. s. 5 IV

These drugs are too well known to require any explanatory comments except to say that quinine is actually absorbed from the bowel as is shown by its recovery in the urine subsequently and by its production of tinnitus. The alcohol aids in the solution and absorption of the quinine. The olive oil insures freedom from irritation and aids in more uniform absorption and evaporation of ether.

The hypodermic formula consists of—

Morphine Sulphate gr. 1/6 or gr. 1/4

Magnesium Sulphate (50% sol. in 2½% novocaine) 2 c.c.

Morphine is a well known narcotic and analgesic. It relieves pain and aids materially in softening a hard and rigid cervix, for which purpose it has been used for many years in obstetrics.

Magnesium sulphate will require a little more detailed description as to its properties, inasmuch as it is an extremely toxic drug if improperly used. It produces anesthesia and inhibits life. Meltzer in 1898 showed that if two drops of a 5% magnesium sulphate solution was injected into the brain of a guinea pig, a complete anesthesia and relaxation of the body followed, lasting several hours. With this as a basis a prolonged experimental study of magnesium was carried out and many articles published. It was definitely established that its action was not one of motor paralysis alone but also one of general relaxation and anesthesia producing loss of consciousness and sensibility. In 1916 Meltzer and Auer used it as an anesthetic in man without any untoward results.

It would require too much time to enumerate the animal experiments carried out by Meltzer, Auer and Gwathmey for the purpose of arriving at an absolutely safe dose of magnesium sulphate that could be used clinically to produce the desired analgesic effect and so I will only state that the result of their thorough and careful study led them to the conclusion that the clinical dose of 2 c.c. of a 50 per cent magnesium sulphate solution is one hundred times removed from the minimum lethal dose and that a man weighing 165 pounds would have to be given 128 such injections to make the drug fatal. Magnesium sulphate causes paralysis and loss of sensibility without excitation. Ether causes excitation before anesthesia is produced. These facts suggested the combined use of ether and magnesium sulphate and it was found that there existed what is known as a synergism between these two drugs, namely, that there is a reciprocal augmentation of the action of one by that of the other. This augmentation is more than a summation of their combined properties because the resultant effect is too profound.

To prove this principle Meltzer showed that the amount of ether necessary to anesthetize a dog is only one tenth as great when the magnesium is used as when it is not used. Gwathmey showed this same principle to exist with the use of morphine and magnesium. By combining a certain given dose of morphine with 2 c.c. of 50 per cent magnesium sulphate the narcotic action of the former was increased from 50 to 100 per cent. In other words, morphine given

with magnesium sulphate will relieve pain from ten to thirty hours whereas morphine alone will give relief for only from two to four hours. With ether-oil and nitrous oxide it apparently deepens the anesthesia and we have observed that we get along with much less gas-oxygen when we use the rectal ether analgesia with magnesium sulphate and morphine hypodermically.

Having given a very brief outline as to the action of the various drugs used in the so-called ether-oil analgesia we come to the actual technic of its administration. As stated before, it is a simple procedure and yet the degree of success depends very much upon its correct usage, especially as to time and manner.

*Administration.*—This, I think, is extremely important, but difficult to state concisely as it depends so much upon the attendant's ability to properly interpret the findings of a careful examination of the particular patient in labor. This examination should mean more than to determine the degree of dilatation, softening and thinning of the cervix, duration and character of the contractions, proportion and position of passenger to passages. It means, in addition, an understanding of the patient's emotional make-up, her reaction to pain, her willingness to coöperate, her endurance and, in short, her general mental attitude to her travail, and this is where experience and judgment are our greatest help.

For practical purposes, the best time to begin with the administration is when the pains come every four to five minutes, last about thirty to forty-five seconds with a two to two and one-half finger dilatation. The patient has had her preliminary preparation, including a thorough cleansing enema. The first hypodermic injection consisting of 1/6 gr. morphine sulphate and 2 c.c. of 50 per cent magnesium sulphate solution in 2.5 per cent novocaine is given, preferably during a pain and best into the gluteal muscle. This to be done, of course, under strictest aseptic technic. If in twenty to thirty minutes there is no appreciable relief, a second injection of 2 c.c. of 50 per cent magnesium sulphate is given, but no more morphine. As a rule, this insures considerable relief and relaxation. If labor progresses and the patient begins again to complain of pain, the ether-oil enema

should be given, but not sooner than forty-five to sixty minutes after the first hypodermic.

The necessary apparatus consists of a No. 22 French soft rubber catheter, a large glass syringe holding at least 30 c.c. and an artery clamp.

The patient is placed in the left Sims position. The anal region is thoroughly anointed with vaseline to avoid irritation. An ounce of olive oil is poured into the barrel of the syringe to which the catheter is attached and the catheter is allowed to fill entirely with oil so as to exclude all air. The catheter is then clamped and inserted into the bowel to a distance of at least eight inches. The gloved finger should also be introduced to keep the catheter from curling up on itself and to assure its passage beyond the fetal head in case it is low in the pelvis. The clamp is then removed and the oil slowly forced into the bowel, allowing a small amount to remain at the bottom of the syringe to avoid the later inclusion of an air bubble. The warmed ether-oil is then poured into the syringe and allowed to gravitate into the bowel, a stripping movement along the catheter aiding this, although the plunger may be used if necessary. The injection should be made slowly between contractions and the patient cautioned against bearing down. As a rule, about ten to twelve minutes should be consumed in the administration of the ether-oil enema. It is well during a pain to remove the plunger and press on the perineum and buttocks so that any excessive gas or air will escape through the catheter and syringe rather than alongside the tube and thus force out the solution. Following the ether-oil another ounce of olive oil is injected. The catheter is then clamped while it is still filled with oil, the syringe removed and the catheter left in the rectum for about fifteen minutes, during which time the perineum and buttocks are supported and the patient urged not to bear down with a pain. Most patients will coöperate nicely as they are anxious for relief, having previously been told that they must endeavor to retain the injection if they are to get help. The morphine and magnesium sulphate previously given aid greatly in their ability to do this. A nurse should remain present with the patient as some of them are rather restless and toss around more or less. In nearly all cases the patient registers

definite drowsiness and pain relief even before the giving of the enema is completed. Half an hour following the enema another hypodermic of 2 c.c. magnesium sulphate should be given, but no morphine. In the average successful case the patient will sleep quietly between contractions and will give but very little evidence of suffering when they do occur, possibly moving about some and moaning a little. When asked whether or not she is having pain the answer is usually rather indifferent and more in the negative.

The average duration of the analgesia is three and a half to four hours and in long labors the ether instillation may be repeated three or four times at three or four hour intervals, though that is seldom necessary. In all but the first enema only 10 grains of quinine should be used and the ether dosage too may be reduced according to indications. If the time is properly gauged for the administration of these drugs and the labor is practically normal, the patient will nearly always deliver in from one to six hours following the first instillation. The average time in our series was five hours and by eliminating five cases of unusually long labor (one of sixty hours) the interval would be reduced to three hours. The amount of inhalation anesthesia necessary in these ether-oil cases varies. In our experience it has been greatly reduced, the average time being 49.6 minutes—quite a number of patients requiring none at all.

When these mothers are questioned on the following day it is remarkable how hazy their memory of the events of their suffering is, many of them do not recall being taken to the delivery room and some do not recall anything until some time after they return to their rooms.

*Experience.*—We have used this form of analgesia at the Hillcrest Hospital in about 300 cases, and I am reporting here somewhat in detail 100 cases so taken care of in 1926. Of these 100 cases 74 were primiparas, 16 in their second confinement, 7 in their third and 3 in their fourth. Ninety-four required but one ether-oil enema and six had two.

*Method of Delivery.*—Seventy-five were spontaneous deliveries, 2 breech extraction, 1 internal podalic version on account of brow presentation, 17 low forceps operations and 4 median forceps operations. These were persistent posterior positions and were treated by the Scanzoni method.

*Degree of Pain Relief.*—This again is a matter difficult to ascertain definitely as it involves the individual reaction to pain as well as pain relief. What is pain to one is merely slight discomfort to another. It also depends very much upon what the patient has been led to expect. It is decidedly poor policy to promise a painless labor. We aim to tell our patients that they can reasonably expect a marked degree of comfort and pain relief, especially if they coöperate fully with our efforts to help them. Mutual understanding, confidence and full coöperation between patient and accoucher are wonderful aids to the successful conduct of a trying labor case. We feel justified in stating that in our experience all cases so treated get some benefit and relief. At least 95 per cent of the cases are greatly relieved and a large number of them are very emphatic in saying that pain relief was almost complete. Practically all of them when questioned later show that their memory of suffering is rather vague.

*Influence on Length of Labor.*—This depends somewhat on one's ability to judge the proper time in labor to begin the pain-relief treatment. If given earlier than indicated above it may temporarily stop labor but that would cause no real harm to either mother or child and it would not interfere with the repetition of the treatment later when labor is again properly advanced. From our limited experience we have come to the conclusion that if properly given it does not lengthen labor, in fact, in many instances we have felt that it hastened the end of the first stage, especially in those cases having a rigid cervix and where membranes ruptured early.

*Effect upon the Baby.*—In our series of 100 cases (101 babies) we had: One stillbirth in a primipara with prolonged labor, early rupture of membranes, rigid cervix, persistent posterior position and a difficult medium-forceps delivery.

One early post-natal death, five hours after a difficult instrumental delivery.

One anencephalus.

Six babies moderately apneic requiring moderate degree of resuscitation, but recovering well. The remaining 93 babies showed good color and cried spontaneously.

*Effect on Third Stage of Labor.*—Our observation is that the ether-oil in no way affects this stage of labor. I might state here that we use 0.5 to 1 c.c. of pituitrin practically routinely at

the end of the second stage. We feel that it shortens this stage and reduces the amount of blood loss. We had no cases of retained or adherent placenta or secundines, in fact, no cases necessitating any intra-uterine or intra-vaginal manipulation or any treatment whatever for hemorrhage. But constant certainty of a well contracted fundus with an assistant's hand on the patient's abdomen is imperative to good prophylactic treatment against unnecessary blood loss. Blood is the patient's life and it should be constantly in the attendant's mind that there must be no needless loss of this precious fluid.

#### SUMMARY

In my opinion the following statements can be justly made in favor of Ether-Oil Morphine Magnesium Sulphate Analgesia:

1. It in no way endangers the life or health of mother or child. It is inexpensive, simple of administration, and calls only for well recognized drugs.

2. It leaves the patient more cheerful and less exhausted after labor. This is very noticeable and makes for a happier immediate puerperal state and a better and more rapid recovery. Memory of the otherwise painful event is definitely blunted and that is always desirable.

3. It not only relieves the patient from pain, suffering, and anxiety but it does much to calm and quiet the immediate family. We all have to admit that the patient's immediate relatives cause us more trouble and actual worry at times than the patient herself.

4. It also very decidedly helps the doctor in attendance on a slow and trying labor case. By this I mean that no matter how good one's judgment as to the patient's progress the constant imploring and begging of the patient and her family for a termination of the suffering is bound now and then to influence one to too early interference with an otherwise normal but slow and painful labor. We are not doing as many operative deliveries nor have we as many traumatized babies as we had previous to using this form of pain relief.

In closing I wish to thank Dr. C. E. Willcutt of Hillcrest Hospital for the privilege of reporting a number of his cases and also Miss Willcutt, our anesthetist, for assembling the necessary charts and making a very helpful outline. 801 Physicians and Surgeons Building.

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#### MEDICAL SCHOOL AND HEALTH CENTER IN PEKING

"In spite of disturbed conditions in China the Peking Union Medical College, a modern teaching and research center, built, equipped, and maintained by the Foundation, continued its work without interruption during 1926. In the medical school there were sixty-four undergraduate students and eighty-two physicians doing advanced work. The school of nursing enrolled twenty-three pupils and twelve graduate students. Of the eighty-two teachers, forty-three were Chinese and thirty-nine were foreigners.

"The large proportion of Chinese teachers reflects a policy which was adopted when the institution was planned in 1916. The aim has always been to develop a wholly Chinese teaching staff and ultimately to transfer the college and hospital to Chinese auspices. This plan has been so consistently followed that the first step could be taken safely in the early future.

"Even now, should an emergency arise, there would be enough Chinese staff members to constitute more than a skeleton organization without any foreigners at all. The plant could be operated and the hospital kept in service. Even the instruction of students could be creditably continued in almost all departments, in a few on quite the present basis. For the hospital superintendent, the superintendent of mechanical opera-

tion, the heads of two departments, the second men in others, promising juniors in the rest, a large group of the nurses, many of the secretaries, practically all the typists, and the subordinate personnel are Chinese. A competent Chinese director for the whole institution could probably be found either from within the present staff or from a group of well-trained Chinese doctors who have had administrative experience elsewhere. A premature and hasty transfer to Chinese control would no doubt be unfortunate for the institution, but it need by no means be disastrous, provided the Chinese staff was permitted to carry on without interference from political intrigue or public disorder.

"For obvious reasons China has offered no opportunity for public health work of the kind which the Foundation is prepared to undertake. There has been no stable government with which to enter into relations. The Peking Union Medical College has, however, co-operated with the Metropolitan Police Department in creating a health center, which during 1926 had its first full year of operation. The activities have included sanitation, the gathering of vital statistics, the control of communicable diseases, and medical service through a clinic which does both curative and preventive work. Doctors, laboratory workers, sanitary inspectors, and visiting nurses have constituted the staff." —Information Service of the Rockefeller Foundation.



## MELANCHOLIA\*

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and

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To anyone interested in the various so-called "functional" diseases to which the human race is subject, anything concerning a functional psychosis known as melancholia merits consideration. In every branch of medicine one encounters patients afflicted with this disease, for it is a disease in the broad sense of the term, with a rather definite group of symptom complexes taking a certain course. In spite of the fact that these symptoms cannot be heard with a stethoscope, photographed with an x-ray machine, or palpated with the examining finger, they do exist, and, by a careful history, exploration of the patient's mental fields, and determination of his volitional, emotional, perceptual, and intellectual reactions, can be elicited. Because of their powerful influences upon the conduct and comfort, yea, even the life of the individual, they must be recognized and treated.

During the past three years we have had the opportunity of examining and treating a fairly large series of patients suffering from melancholia, and from this series we have selected 150 cases to form the basis for a statistical review of the subject. The desire to present this study and further to emphasize one or two very important facts prompted the writing of this paper.

The material selected was limited to only typical cases of melancholia presenting definite mental symptoms and having no schizophrenic components. Believing that the depressions of manic-depressive insanity and the melancholias of the involutional period of life are manifestations of the same psychopathological mechanism, we accepted cases for this study irrespective of the age at which they occurred. This procedure may be subject to criticism from some psychiatrists, because certain ones have endowed the "melancholias of the period of involution" with a nosological independence,

pointing out certain differences that exist between them and the depressions of manic-depressive insanity. However, others maintain that involutional melancholia is merely a subgroup of manic-depressive insanity, and think that the difference between the two is one of degree only. White<sup>1</sup> attributes the large number of depressions occurring during the involutional period to what he calls a "failure of compensation at the psychological level," stating that conflicts which the patients have been able to deal with effectively during the up-hill period of life break through and overwhelm them when the constructive processes begin to fail them after middle age. Gregg<sup>2</sup> states that the use of the term "involutional psychosis" seems unjustified unless it is supported by evidences of physiologic abnormality. We believe with Bleuler<sup>3</sup> that the rigid distinction between the depressions occurring during the course of a manic-depressive psychosis and those coming on in later life can no longer be satisfactorily maintained although the latter do show some slight variations from those occurring earlier in life. They have a more protracted course, they grow more slowly, remain at their height longer, and require a longer time to decline. Single attacks are more common and agitated forms occur practically exclusively during later life.

What constitutes a melancholia? Again we turn to Bleuler,<sup>3</sup> whose description we use because it is comprehensive and brief. In melancholia all experiences are painfully colored and the patient's expression is desperate, painful and anxious. Association of ideas is retarded. Thinking becomes slow and laborious and revolves about the patient's own misfortune. He says, "I think, but I do not get anywhere." All thoughts which are not in harmony with his psychic pain are made difficult, and there is a facilitation of all associations which tend to reinforce his depressed mood. Orientation usually is good but attention remains concentrated upon the imagined misfortune and does not pass readily from one topic to another. This is called hypertenacity of attention. Irresolution may be present to a marked degree, i.e., a patient may want to change his place at the table, lift up a chair, and then require a half an hour trying to decide where he should place it. Delusions occur and their content always is very distressing to the patient. They usually concern economic,

\*Read before the Ramsey County Medical Society, St. Paul, June 6, 1927.

bodily, or spiritual ruin. The patients are usually extremely self-accusatory and, in contrast to the paranoiacs, who believe themselves *persecuted*, think that their tortures are well deserved and that they are being justly *prosecuted*. For this reason we use the term "delusions of *prosecution*" rather than "delusions of *persecution*." Weygant<sup>4</sup> gives the following list of delusions that are encountered. The remarks in parentheses are our own.

1. Hypochondriacal delusions (fixed ideas concerning the patient's own body and bodily functions, *i.e.*, stomach, heart, and so forth);
2. Delusions of sinfulness (having committed some unpardonable crime or sin);
3. Delusions of persecution (prosecution);
4. Delusions of poverty;
5. Ideas of unworthiness;
6. Delusions of explanation;
7. Ideas of insignificance;
8. Nihilistic ideas (nothing exists—patient is a small wad of paper or a little ball of yarn, everybody is dead, and so forth);
9. Delusions of possession;
10. Delusions of grandeur.

We have never encountered nihilistic ideas or delusions of possession or of grandeur during the course of a pure uncomplicated melancholia. We believe that they are suggestive of an organic psychosis when they do occur.

In the beginning most cases of melancholia give the impression of a neurasthenia, as do the milder forms throughout their entire course. Passing hysteriform syndromes such as fainting spells and attacks of dizziness also occur. In addition to the emotional depression, the intellectual retardation and inhibition of flow of ideas, there is a physical depression. Most of the patients are underweight, have no appetite, have a slow pulse, a low blood pressure, and a sub-normal temperature. There is a lack of general physical tone, the movements are slow and undecided and the bowels usually are constipated. In other words, the patients are in a state of both mental and physical depression.

With this brief description let us pass on to our series. As before stated, only those cases which conformed to the above concept were included in this study, and all those showing any schizophrenic manifestations (suggesting dementia precox) or exhibiting any signs of organic

cerebral disease were not used. Recurrent cases were included irrespective of whether the preceding attack had been mania or depression and only two cases gave a history of a preceding manic attack. One hundred and fifty cases were studied from the standpoint of age, number of preceding attacks, sex, family history, preceding emotional strain, mode of onset, tendency toward suicide, delusions and hallucinations.

#### AGE INCIDENCE

The ages of our patients ranged from 21 to 65 years, inclusive. The number of cases in each decade was as follows:

Decade	Cases	Percentage
3	16	10.6
4	31	20.6
5	50	33.3
6	44	29.3
7	9	6.0

It is possible that some of the cases occurring during the seventh decade may have been atypical pre-senile psychoses. However, their characteristic symptomatology and the absence of any degenerative manifestations led us to a diagnosis of melancholia in all of these. As can be seen, the peak was reached during the fifth decade (between the ages of forty and fifty), and the average age of all the cases was 44 years and 1 month.

#### NUMBER OF PRECEDING ATTACKS

W. Bevan Lewis<sup>5</sup> in a study of 83 cases found a history of previous attacks in 38 per cent. In our series, fifty-six cases, or 37.3 per cent, had suffered one or more previous attacks. The distribution according to the number of previous attacks was as follows:

Previous Attacks	Cases	Percentage
0	93	62
1	43	28.7
2	12	8
3	1	0.6

The age distribution of all patients having had previous attacks was as follows:

Decade	Cases	Percentage
3	6	4
4	15	10
5	19	12.7
6	14	9.3
7	2	1.3

If these percentages are plotted in a graph together with a curve showing the age incidence of melancholia in general, it will be seen that the two lines run roughly parallel. In other

words, the recurrent types of melancholia (those giving a history of previous attacks) are found most frequently during the periods of life when melancholia in general are most often encountered. This would indicate that the recurrent types are not peculiar to any one period of life.

#### SEX

Eighty-five, or 56.6 per cent, were women. This percentage for females is somewhat lower than that given by most authors. Bleuler estimates the percentage of women at 70 per cent. In spite of the fact that there is a great variation in the statistics on this point, everyone is practically agreed that the disease is more common among women than it is among men.

#### FAMILY HISTORY

Opinions as to the importance of the family history as an etiological factor in melancholia vary considerably. Bleuler<sup>3</sup> states that 80 per cent of the patients are tainted, if the conception of "taint" is not too limited. Menninger<sup>6</sup> believes that the family history is apt to be very bad in melancholia. Piltz<sup>7</sup> found attacks of periodical depression developing in certain families at a certain age regardless of provocative causes. In one family six members had their first attack at the age of 20. They belonged to three different generations. In another family four members developed it at the age of 35. White,<sup>1</sup> on the other hand, believes heredity to play a relatively unimportant rôle in melancholia. Lewis<sup>5</sup> found that only 27 per cent of his cases had a family predisposition to insanity. Again our figures practically coincide with those of Lewis, there being a family history of insanity in only 26 per cent of the cases in our series. Undoubtedly a much larger proportion of the cases have families with a *tendency* toward moodiness and more or less prolonged displacements of the affect—the so-called "syntonic" personalities. It is quite probable that the majority of cases of melancholia have such a family background and are themselves endowed with mental patterns exhibiting a tendency in this direction. However, an accurate statistical determination of the family type was not feasible in all cases of our series, and the family histories were designated as "positive" only in those instances where actual breaks had occurred. Nevertheless, nobody knows how many people with unstable ancestry never ex-

perience a mental breakdown, so the other side of the story has never been told and there is no scientific control on our statistical observations. In general, we feel that the importance of heredity in melancholia has been somewhat over-emphasized. At any rate, it is not as important in this group as in the psychoses where there is actual mental deterioration, *i.e.*, dementia precox, and so forth.

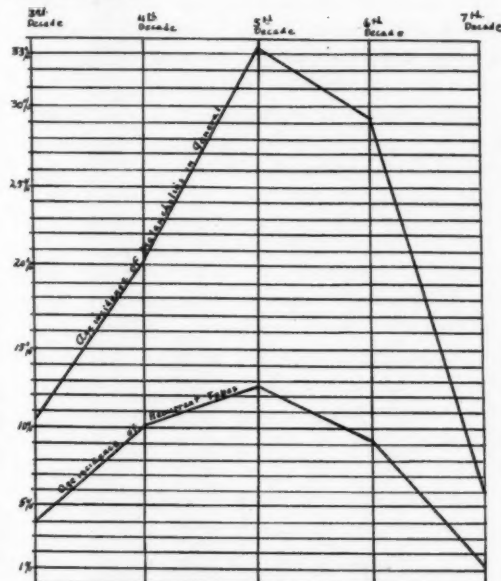


Fig. 1. Chart showing relative incidences of melancholia in general and of melancholias giving a history of preceding attacks (recurrent melancholias). It will be noted that the two lines run roughly parallel. This indicates that recurrent melancholia is not peculiar to any one period of life.

#### PRECEDING EMOTIONAL STRAIN

Again we must take issue with those who place much emphasis on the importance of emotional strain in the production of a melancholia. By emotional strain we mean any emotional reaction on the part of the individual which was definitely more intense and more prolonged than his usual reactions, the prolonged reaction having been precipitated by some external happening. Naturally, the same event would not cause an emotional strain in every individual any more than the same amount of physical exertion would cause the same degree of muscle soreness in everybody. Whether or not a certain event can be said to have caused an emotional strain in a patient must be left to the judgment of the individual. We usually ask them, "Were

you much upset by it?" or, "Did it cause you any undue alarm or worry?" The most frequent causes for emotional strain in our series were death in the family, financial reverses, business worries, prolonged family quarrels, and unrequited love. We obtained a history of some preceding emotional stress in 30 per cent of our cases.

The importance as an etiological factor in melancholia of a positive family history upon which has been superimposed an unusual amount of emotional stress has been emphasized by White.<sup>1</sup> He states that this combination is responsible for a large proportion of the cases. However, in our series we encountered it in but 9 per cent of the patients.

#### MODE OF ONSET AND EARLY SYMPTOMS

In the vast majority of cases (over 95 per cent) the onset of the disease was insidious. The early symptoms most frequently complained of were insomnia, headaches, vertigo, gastro-intestinal disturbances, unmotivated depression, and a fear of going insane. The popular lay belief that a person who worries about losing his mind never does so is entirely unfounded, for many patients with marked mental pathology are dominated by that very fear.

#### TENDENCY TOWARD SUICIDE

Judging from the number of preventable suicides committed almost daily, the tendency toward self-destruction in melancholia is too little recognized. Its importance cannot be over-emphasized. Practically every newspaper contains daily accounts of suicides and gives "despondency over ill health" as the cause. It will be noted that most of the victims of this trouble are, or were, in the involutional period of life where melancholias most frequently occur, and we believe that the "despondency" and "ill health" are in reality the symptoms of an already existing melancholia. If these cases are promptly recognized, and their suicidal tendencies realized and properly handled by the physician, most of the attempts at self-destruction will be thwarted. No doctor has discharged his full duty to the patient and to the patient's relatives without impressing upon the relatives the terrible seriousness of this tendency. We consider every melancholic patient as a potential suicide, even when he seems to be almost well. Vigilance should never for a moment be relaxed, be-

cause, if a patient wants to take his life he uses just those occasions of which one later says: "But it was only for a moment."

While we consider every one of our melancholias as having suicidal tendencies, in our series 58, or 38.6 per cent, were what we term "definitely suicidal." That is, they had either attempted to kill themselves or threatened to do so on more than one occasion and required special care in psychopathic wards.

#### DELUSIONS

Delusions were definitely present in 55 cases, or 33.3 per cent. As Bleuler states, they always are of a very distressing nature and usually concern either the spiritual, economic, or physical condition of the patient. "My soul is lost;" "God has forsaken me;" "My money is all gone and my family will starve to death;" or, "My stomach and bowels have collapsed and refuse to work any more," are among the most frequent utterances heard from these patients. Such ideas are quite persistent during the course of the disease, but disappear entirely when the patient recovers.

#### HALLUCINATIONS

According to our experience, hallucinations in melancholia are not as common as most writers would have us believe. When they do occur we usually are not dealing with a pure form of the disease, but are able to isolate other manifestations of a schizophrenic nature. However, in a few cases of apparently pure melancholia of the unmixed type they do occur and in our series the number was 10, or 6.6 per cent. Of these 10 cases, 7 patients had auditory and 3 patients had visual hallucinations. Some of the so-called auditory hallucinations may have been illusions, but from a practical standpoint this distinction is not important.

#### PROGNOSIS

Because of the impossibility of following up all of our cases after they left the hospital, and because some of them were transferred to state hospitals and were not heard from again, we could not accurately determine the prognosis by statistical methods. However, we estimated it at about 75 per cent for recovery in the uncomplicated cases. This applies only to the individual attack and does not take into consideration the possibility of recurrences.



## SUMMARY

1. Melancholia is a definite clinical entity with a rather characteristic group of symptom complexes running a certain course.
2. It is a sub-group of manic-depressive insanity.
3. One hundred and fifty cases were studied from the standpoint of age, number of preceding attacks, sex, family history, preceding emotional strain, mode of onset, tendency toward suicide, delusions, and hallucinations.
4. The average age of all patients was 44 years and one month. The highest percentage of cases occurred during the fifth decade.
5. Thirty-seven and three-tenths per cent had had preceding attacks. This figure agrees with Lewis' 38 per cent in 83 cases.
6. Recurrent types are not peculiar to any one period of life.
7. Fifty-six and six-tenths per cent were females.
8. A "positive" family history was obtained in only 26 per cent. However, a family "tendency" probably is much more common.
9. The importance of heredity in melancholia has been over-emphasized.
10. The importance of preceding emotional strain has been over-emphasized, a history of such strain having been obtained in but 30 per cent of our cases.
11. Only 9 per cent had a combination of positive family history plus preceding emotional strain.
12. In the vast majority of cases the onset is gradual.
13. There is a marked tendency toward suicide. This is the gravest and least recognized symptom of the disease and its importance cannot be overemphasized.
14. Delusions of a painful nature occur in 33.3 per cent.
15. Hallucinations occur in 6.6 per cent.
16. The prognosis for recovery from the individual attack is conservatively estimated at 75 per cent.

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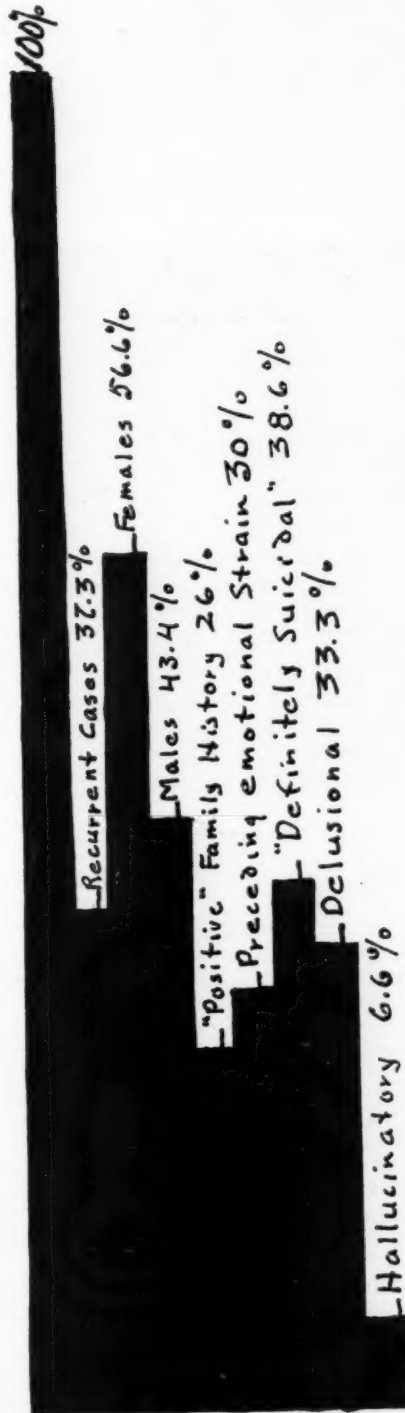


Fig. 2. Percentage incidence of various factors in melancholia.

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### THE ORIGIN OF VITAMIN D

The antirachitic substance, vitamin D, occurs in some fish oils—notably in cod liver oil—in egg yolk fat, and to a small extent in milk fat. As a rule the vegetable fats are not antirachitic. A few instances of undoubted potency in oils of plant origin have been ascribed to the effect of solar irradiation of the products incident to their commercial preparation. This is true of cocoanut oil prepared from sun-dried copra. Whereas the other vitamins appear to originate in the vegetable kingdom, this is not the case with vitamin D. Experiments carried out to learn the origin of vitamin D in the cod-fish, raise the question as to whether vitamin D cannot actually be synthesized by certain species. These experiments also revealed that the oils of the herring and sardine rival the cod in antirachitic potency. (Jour. A. M. A., June 4, 1927, p. 1807.)

### DESITIN NOT ACCEPTABLE FOR N. N. R.

The Council on Pharmacy and Chemistry reports that Desitin is the non-descriptive name applied to an ointment manufactured by the Chemische Fabrik Desitin Aktiengesellschaft, Berlin-Tempelhof, Germany, and distributed in the United States by the Desitin Chemical Company, Providence, R. I. According to the distributor, there are in 100 parts of Desitin, 28 parts zinc oxide, 14 parts "Bolus alba" (kaolin), 16 parts "Adeps lanæ treated with  $H_3PO_4$  and neutralized with KOH," 22 parts "Cod-liver oil extract, which is purified in a  $KMnO_4$  solution and then extracted. This extraction is subjected to a treatment with  $Cl_2$  and 20 parts "Natural Vaseline." No information was furnished the Council in regard to the actual composition of the cod liver oil extract and an analysis by the "Rijks-Instituut" did not confirm the claimed composition. The ointment is recommended for all sorts of skin lesions and extravagant claims are made for its effects. The Council found Desitin unacceptable for New and Non-official Remedies because the claims made for it are unwarranted. (Jour. A. M. A., Feb. 26, 1927, p. 666.)

### HEART-BLOCK OF CONGENITAL ORIGIN\*

#### Report of a Case

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Minneapolis

Since the introduction of the polygraph and electrocardiograph, the diagnosis of heart block in adults is quite commonly made. This condition, however, is uncommon in children. The congenital form of atrio-ventricular disassociation is especially rare. Eighteen cases of congenital heart block, which have been verified by polygraphic or electrocardiographic tracings, have been reported in the literature up to the present time. Carter and Howland<sup>1</sup> reported a case of this type in 1920 and collected seven previously reported cases. Meyer<sup>2</sup> quoted by Vaquez, in discussing this subject in 1923, was willing to accept sixteen cases as definitely proved cases of atrio-ventricular disassociation. Romberg and White<sup>3</sup> in 1924 next reviewed thirteen cases and added one of their own. Sprague and White<sup>4</sup> then added an additional case in 1927.

Heart block in children, whether acquired or congenital, differs in some respects from that found in adults. The etiology in adults is practically always some chronic degenerative disease which usually involves the entire cardiovascular system. Most commonly it is caused by a diffuse sclerosis of the coronary arteries and is many times an end-result in a heart that is failing. In children, however, the disassociation is usually found during the course of some acute infection, most commonly in diphtheria or in acute rheumatic fever. Most cases of acquired heart block in children are transitory. If the patient recovers from the acute infection, the block usually disappears and the heart becomes normal. However, some cases have been reported in young adults in whom the block has persisted over a period of years after recovery from diphtheria or acute rheumatic fever. Sprague and White<sup>4</sup> report a case in a young adult in whom a persistent heart block occurred after an injury to the chest. Disassociation of undetermined origin occurs occasionally in both

\*From the Lymanhurst School Heart Clinic.

adults and children. Congenital heart block is, of course, always persistent. This disorder practically always occurs in hearts otherwise deformed at birth. It is generally believed that congenital heart block is caused by a defect in the interventricular septum in the neighborhood of the bundle of His or by maldevelopment in the His bundle itself.

Nervous symptoms are common in adult heart block. Fainting spells, convulsions, or the more severe Adams-Stokes syndrome frequently appear in adults. In children, however, nervous symptoms are unusual. The pulse in adults is slower than in children. It is usually below 30 in the adult type but is seldom below 40 in children and is usually between 50 and 60.

The prognosis of the adult form of heart block is always grave as it almost invariably occurs in otherwise badly crippled hearts. In acquired heart block in children, as Sprague and White<sup>4</sup> have pointed out, the prognosis is quite favorable, as in this form of disassociation the heart may not be otherwise seriously damaged. Children with acquired high-grade heart block have been known to lead a fairly active life for years. The prognosis in the congenital form is bad.

A young girl with congenital heart block was studied over a period of two years at the Lymanhurst School Heart Clinic. This case is being reported because of the rarity of this condition and because of its interest.

#### CASE REPORT

Olga A., nine years of age, was referred to the Lymanhurst School Heart Clinic by the school physician for an opinion as to her heart. The child had reported to school for the first time and was examined to determine whether or not she was physically able to attend school. The family history is unimportant. The following personal history was obtained. The child was born a "blue baby" and she had always been underweight and undernourished. She tires easily although she is able to play ordinary games with other children. She becomes very blue on crying or on exertion. She has a persistent non-productive cough, gets out of breath easily, is very fretful and does not sleep well. She had whooping cough in 1918, measles in 1920, influenza in 1921 and probably pneumonia in 1922. The father thought that the child was able to attend school.

Her physical condition was rather characteristic of a so-called "blue baby." Her face and all the mucous membranes were markedly cyanotic. There was a definite clubbing of the tips of the fingers and toes. The tongue also was very cyanotic. The tonsils were

large. The cervical lymph nodes were moderately enlarged. The right ear was discharging a thick, yellowish pus when the patient was first seen. The eyes were somewhat prominent and cyanotic. There was a marked pulsation of the vessels of the neck. It was noted that the jugular pulse was more rapid than the radial, and that some of the jugular pulsations were between radial beats. The jugular pulse was found to be 88 and the radial 44 per minute. The precordium was somewhat prominent and there was a marked systolic thrill over the base of the heart. The

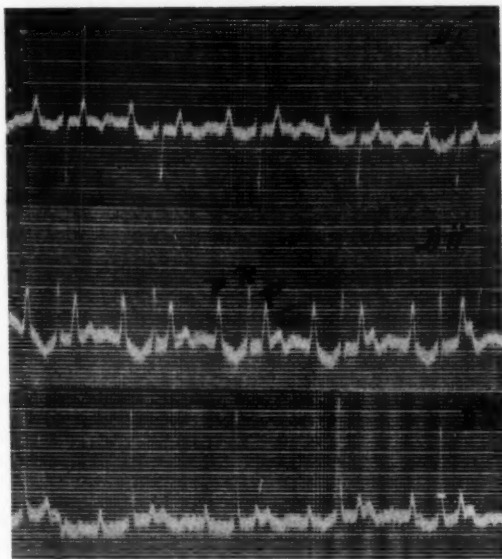


Fig. 1. Rate ventricular 65. Rate auricular 130. P.R. .28 sec.  $P_1$  is exaggerated,  $P_2$  most marked. Inverted  $T_1$ . Marked right preponderance. 2:1 heart block.

cardiac area by percussion was 3 cm. to the right and 9 cm. to the left of the mid-sternal line in the fourth space. The heart sounds were slow, regular and of fair quality. There was a prolonged, harsh, loud systolic murmur heard best in the second and third interspaces at the left of the sternum. The murmur was transmitted over the entire chest and also over the back. Moist râles were heard at the bases of both lungs. The liver and spleen were not palpable. There was no edema. A diagnosis of congenital heart disease was made, probably pulmonary stenosis with a 2 to 1 heart block. The 6 foot roentgenogram showed the following measurements: M.L. 8 cm., M.R. 4 cm., transverse chest diameter 21.5. There was a definite prominence of the pulmonary artery and the heart was enlarged to the right and left. The electrocardiographic diagnosis was as follows: Rate ventricular 65; rate auricular 130; P.R. .28 second;  $P_1$  exaggerated;  $P_2$  most marked; inverted  $T_1$ ; marked right preponderance; 2 to 1 heart block.

In referring back to the hospital records of March, 1922, it was found that this girl had been confined to bed for five days with a temperature as high as 104,

had been delirious, and desperately sick, yet, her radial pulse rate was never over 55. This occurred eight months prior to her first visit to our clinic. The slowness of the pulse was commented on by those who examined her during her stay in the hospital, but no mention was made of a possible heart-block and no electrocardiographic tracings were taken. A diagnosis of congenital heart-disease, probably pulmonary stenosis, was made at that time. The cause of her temperature was not definitely determined, although a roentgen film taken at the time was diagnosed as probable bronco-pneumonia.

The patient continued to return to the clinic at regular intervals. She attended school but was absent a great deal. Her radial pulse rate varied from 44 to 54 but the 2 to 1 heart block was always present. On February 5, 1925, she died suddenly, apparently without having been sick. A post-mortem examination was not obtained.

Many theories have been offered to explain the more rapid pulse and the relative comparative absence of nervous symptoms in children as compared to adults. Volhard and Lian<sup>2</sup> explain the faster pulse by the fact that children normally have a more rapid pulse and therefore a more rapid independent ventricular rate. The nervous symptoms occurring in adults are akin to those occurring in coronary disease in general. Coronary disease is not found in children, and this may explain the absence of the usual nervous symptoms. Carter and Howland<sup>1</sup> in discussing the absence of grave syncopal attacks in children give the following as their reason: "It would seem apparently that as a result of the congenital nature of the lesion the heart early acquired the

power of adapting itself to the constant load necessary to maintain an efficient circulation."

The congenital nature of this case may be questioned because of the fact that the slowness of the pulse was not detected before the girl was eight years old and also because she had had several acute infections which may have produced the block. As has already been noted, acquired disassociation in children occurs most commonly following diphtheria or acute rheumatic fever and rarely following other acute infections. This patient had neither diphtheria nor acute rheumatic fever. She did, however, have congenital heart disease and it is reasonable to conclude that this block was of congenital origin in view of the fact that almost all cases of congenital heart block have occurred in children with congenital heart disease.

Heart block of congenital origin is a rare condition which occurs usually in children with other congenital cardiac defects. Children with heart block do not have the nervous symptoms nor the extremely slow pulse commonly found in adults. Whenever a heart rate below 60 is found in a child a possible heart block should be considered.

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# MINNESOTA MEDICINE

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## EDITORIAL

### Contract Practice

The Washington County Medical Society recently took action in the matter of a certain form of contract practice. For a number of years there has been flourishing in Stillwater a certain fraternal order whose main talking point in the acquisition of new members was the free medical service included in membership. A local physician until recently was retained by the fraternal order for the annual rate of \$2.00 per member. For this fee the physician agreed to furnish medical services to the member and his family, obstetrical, x-ray and venereal care being excepted. One contracting physician figured he received on an average of nine cents a call for his services.

The local county society recently took a very decided stand in the matter and prevailed upon the contracting physician to resign. To avoid any further misunderstanding as to what physicians in Washington county consider proper remuneration for their services a minimum fee schedule effective August 1, 1927, was adopted by the society and a copy sent to the fraternal order with a letter of explanation.

As far as we know, no other county society in the state has as yet adopted a fee schedule but we believe others will follow suit. Much medical practice today involves relations with various types of medical insurance. In each locality there is a fairly well established scale of charges for medical services which the physicians of the locality have adopted through usage and not through official society sanction. The official adoption of a schedule of minimal fees by each county society for use particularly in connection with insurance cases might simplify two phases of a very vital problem. There would be little excuse for cut-rate arrangements such as are commonly made by certain individuals in each community. What often happens is that such individuals become so busy that they give services just about commensurate with the cut fee. This is not in the interests of the patients, physicians or insurance companies. In the second place, there would be little excuse for an insurance company's trying to "jew" the doctor down or to dictate medical fees. In industrial cases in Minnesota the insurance company or representative selects the physician and according to a ruling of the Workmen's Compensation Commission can insist on the patient's using the company's physician and refuse to pay the individual's private physician. As far as we know, however, there is no law in Minnesota covering this important point. With a minimum fee schedule there would be little excuse for such a ruling. Doubtless some physicians are tempted to charge insurance companies more than minimum fees, even excessively at times. A fee schedule adopted by the local county society would eliminate much of the unnecessary friction in existence.

Certain physicians who have had considerable experience with medical insurance work believe minimal fee schedules imperative. We are inclined to agree. There would be nothing in such

a procedure to prevent an individual physician from reducing his charge as at present where inability to pay minimum fees is apparent nor charging more than the minimum rate where conditions warrant it.

### The Kahn Precipitation Test for Syphilis

Since the discovery of the spirocheta pallida an important place in the medical world has been occupied by laboratory tests for syphilis, and of these the best known, the Wassermann reaction, has been very generally recognized and accepted by the patient as well as the physician. Due to its empirical nature, however, its complicated reagents and its lack of standardization, it has not proved to be entirely satisfactory and there has been stimulated an active interest in other tests for the diagnosis of the disease. The precipitation test has been used by various investigators but it has remained for Dr. R. L. Kahn, working at the Michigan State Board of Health, to devise and perfect the precipitation test which has proven to be the most satisfactory and which is becoming very generally recognized throughout the country. The technic and details of his work have been given in many articles published in current medical journals during the past five years as well as in his recent monograph, "Serum Diagnosis of Syphilis by Precipitation" (Williams and Wilkins Co., 1925).

The test is very simple and consists of the inactivated serum from the patient to a diluted antigen similar to that used in the Wassermann. After a thorough shaking for two minutes and a short time of standing the positive cases show a white precipitate and the negative ones merely an opalescence. It may be run as either a quantitative or qualitative test and skill is necessary only in experience in reading the reaction as well as in recognizing and preventing atypical or false precipitation in the antigen. The advantages of the test are the extreme simplicity, the short time involved, the single reagent and the reliability which has been proved by many observers who have been running it in conjunction with the Wassermann reaction. It agreed with the Wassermann in over 90 per cent of cases and it is more sensitive in early or in treated cases. In the Michigan State Board of Health Laboratories it has entirely replaced the Wassermann and has

been officially recognized by the Navy where it may be used in many places where reagents and conditions necessary for the Wassermann are not available. However, the majority of the diagnostic laboratories are not yet ready to give up the well established, even though not entirely satisfactory, Wassermann reaction for the newer, less well known, Kahn precipitation test, and so they run both together, using one as a check upon the other. That it has been so generally accepted and that it occupies so prominent a place in the literature of the day, speaks well for it and it may not be too presumptuous to predict that in the not too distant future it may entirely supersede the old Wassermann reaction in the laboratory diagnosis of syphilis.

MARGARET WARWICK, M.D.

### Eduard Boeckmann

Dr. Eduard Boeckmann is dead. Those rugged Norseman who tilled the virgin soil of our Northwest were his people. He watched their passing, their backs bent with age, their hands gnarled from ceaseless toil, until at last his end had come. Those who still remain will bear with heavy hearts the passing of this great soul.

Nature had richly endowed him. That robust constitution permitted long hours of labor with little rest. From his early years to advanced age he worked long into the night. Frequently in the early morning hours he could be found studying scientific literature or in the preparation of medical works. Gifted with a brilliant mind, his faculty for clear and consecutive thought made him the great physician that he was. His originality, tenacity of purpose, dogged perseverance and independence of thought resulted in attainments for which he was widely known.

He was possessed with an indomitable will and pride that were his heritage. His moral courage should be the envy of all men for he feared no one. His intimates were few, his friendship enduring. In defense of a friend he would stand alone, if need be, for his knowledge of human frailties made him the magnanimous spirit that knows no creed.

His sincerity none will question; he was honest to a fault. Simple in manner and frank in expression, he had a rightful repugnance for ostentation and false show. He repelled the rich

and invited the poor. He appraised the character and not the wealth.

Charity was his religion. What greater virtue hath any man? His benefactions were countless and so unselfishly bestowed that they were part and parcel of the man.

Within that virile frame was a soul of human kindness. The children gathered around him; the aged loved him. With them he was capable of womanly tenderness.

His love for the land of his birth was a ruling passion. He loved her art, her music, her literature and her people. Often in the company of a friend he would read aloud with tearful eye and quivering lips Ibsen's *Peer Gynt*. To talk with his people in their native dialects was to him a source of delight. It carried him back to the districts from whence they came, reminiscences of his boyhood days.

Surrounded by the cultural refinement brought from the old world, blessed with a most devoted wife and happy children, his domestic life flowed smoothly on its course.

His lavish hospitality and sumptuous entertainments are traditional. Noted men of his day graced his table, there to feast on the greatest delicacies, the rarest wines. His conviviality, mingled with his erudition, epigrammatic phrases and witty sallies made him the king of hosts, a prince of good fellows.

We, the physicians of the Northwest, offer to his noble wife and his children our sincerest sympathy in the hour of their bereavement. They and their progeny can speak with pride of the works of Dr. Eduard Boeckmann, the philosopher, the great physician, the great humanitarian.

PAUL DEE BERRISFORD, M.D.

#### LIMITATIONS OF GOITER PROPHYLAXIS

Government authorities believe that there is no reason for special goiter prevention measures on the part of the state and local health departments. They do not see any necessity for universal prophylaxis such as may be attained by iodization of table salt or municipal water supplies. There is a growing opinion that the administration of iodine as a means of preventing goiter should be under the guidance of physicians and should be individualistic. In this way much good may be accomplished. (*Jour. A. M. A.*, July 9, 1927, p. 114.)

## MISCELLANEOUS

### SOME SUGGESTIONS CONCERNING THE MINNESOTA BASIC SCIENCE LAW

E. A. MEYERDING, M.D.

Secretary Minnesota State Medical Association

The new Basic Science Board created by the last legislature is now in full operation and has headquarters at the office of the secretary and treasurer, Dr. T. E. Bell, 110 Anatomy Building, University of Minnesota Campus, Minneapolis, Minnesota.

Application blanks and a letter of instruction have been sent to all physicians in the state. Upon receipt of your application blank it is important that you have it completely filled out and that you return it immediately to Dr. Bell's office with your three dollar check; failure to do so before October 1, 1927, will require a registration fee of \$25.

The following are some of the questions that have come to both the Basic Science Board and the Secretary of the State Association:

1. Where do your register?

At the office of Dr. E. T. Bell, Secretary-Treasurer, 110 Anatomy Building, University of Minnesota Campus.

2. What is the fee?

Three dollars must accompany the application blank. After October 1, 1927, it will be \$25 for those who have failed to register.

3. My license is not registered with the Clerk of Courts.

Your license must be registered with the Clerk of Courts, and he must also fill out the certification on the bottom of the application of the Basic Science registration blank before it is sent to the secretary of the Basic Science Board.

4. My residence is in an adjoining state and I have a Minnesota license so that I can practice on both sides of the boundary?

You must register your Minnesota license with the Clerk of Courts in the Minnesota county in which you do most of your practicing.

5. I failed to register my license with the Clerk of Courts and it has disappeared?

Write the secretary of the Minnesota State Board of Medical Examiners, Lowry Building, St. Paul, Minnesota, and ask for a certified copy. This will be sent to you and must then be registered with your County Clerk of Courts.

6. Supposing I do not receive an application blank from the secretary of the Basic Science Board?

If you have not received an application blank from the Basic Science Board, write the secretary's office at once asking for same.

There may be some physicians who will not receive the application blank from the Basic Science Board due to the fact that no one knows at this time who is en-

titled to practice in Minnesota. The principal reason for requiring registration is to obtain such information.

The Basic Science Board is taking the American Medical Directory as their basis of procedure. If you should have occasion to know that your name is not in the directory, by all means write the secretary of the Basic Science Board for your application at once.

7. Does the new Basic Science Law affect the license of physicians already licensed in Minnesota but living in other states?

Yes. It is necessary that you file your license with the Clerk of Courts in the county you expect you may return to and make application for registration in the Basic Science Board the same as any licensed physician in Minnesota.

8. What am I to do with the Basic Science certificate when I receive it?

You must register with the County Clerk of Courts within 30 days.

9. Many are sending their application blanks in to the secretary of the Basic Science Board incompletely filled out?

Failure to give the complete information required by law to the secretary of the Basic Science Board will necessitate the payment of \$25 after October 1, 1927, to complete the operation. Even if you have previously sent in the three dollars, this does not save you after October 1, 1927, unless you have your registration certificate.

10. What information is most commonly missing from the application blank?

The date and number of your state license and the failure to have filled out your certificate by your local County Clerk of Courts.

11. The next examination of the Basic Science Board will be October 1, 1927, at the University of Minnesota.

Note: The Basic Science Board has consulted with the Attorney General before outlining their procedure for registration.

nesota provides for. To my mind there are two outstanding features of the Basic Science law. The first is the definition of 'The practice of healing.' This definition is so broad and absolute that there can be no doubt as to what the legislature intended. They intended that definition to be so clear cut and understandable that there never will be any controversy about it. They meant—"any person who shall in any manner for any fee, gift, compensation, or reward hold himself out to the public as being engaged in the profession of healing, and they fully intended that this law should properly regulate any person so doing. The other outstanding feature of this law is the section requiring every practitioner of healing in the state to register annually. This requirement provides a means by which the Licensing Boards, who are now made in a measure responsible for the enforcement of the law, can keep in touch with legal practitioners. It will be a great aid in keeping a correct roster of addresses. The State Board of Health is required to publish annually a complete list of all regularly licensed practitioners. The importance of having such a correct list made public needs no argument. It would enable the board to discover cases of individuals using licenses of others. It will enable the separate boards to control unethical practitioners, affording said boards opportunity to consider whether it was desirable to permit continuance of such an individual in the practice of this profession. The annual registration fee will furnish funds for this powerful policing agency. It may be worth while to note that the annual registration fee is \$5.00 for the years 1928 and 1929, and \$2.00 per year thereafter. It is strictly in line with the best practice in other professions or trades. This plan is favored at the present time by many leaders of the medical profession throughout the country who realize the pressing importance of thorough supervision of those who claim the privilege of the physician.

CHARLES BOLSTA, M.D.

#### LEGISLATION AND THE DOCTOR\*

A short time ago a noted member of the legal profession in New York City used the following words in speaking of the regulation of physicians by law: "Members of the medical profession are at times prone to lose sight of the extent to which they are subject to control by public authorities. There is no inalienable right to practice medicine. The right springs from a license granted by the state under regulations prescribed by the authorities. The only fundamental right of the individual which underlies the license is that it may not be withheld as a result of discrimination. A statute regulating the right to practice medicine but leaving the field open to all who possess the prescribed qualifications is sufficient."

That is exactly what the Basic Science law of Min-

\*Remarks made at the annual meeting of the Minnesota State Medical Association, Duluth, Minn., June 30 to July 2, 1927.

#### TWO OBESITY FAKES DODGE FRAUD ORDERS

The Post Office Department called on the Hall Chemical Company, which sells the obesity preparation, Hall's Tablets Triturates, to show cause why a fraud order should not be issued against it. The proprietor of the company submitted an affidavit declaring that the sale through the mails of Hall's Tablets Triturates had been abandoned. Similarly the firm which exploits "Slends," a chewing gum coated with a mixture containing sugar and phenolphthalein, when asked why a fraud order should not be issued for selling Slends through the mails, submitted an affidavit declaring that the business of selling Slends through the mails had been discontinued. There is, of course, nothing in the action of either firm to prevent the sale of the products in question through the drug stores. (Jour. A. M. A., July 9, 1927, p. 138.)



# OBITUARY

## Eduard Boeckmann

Dr. Eduard Boeckmann, 78 years old, widely known physician in the Northwest and a pioneer in medicine in Ramsey county, who had been a resident of St. Paul since 1887, died after a heart attack August 8, 1927, at the home of his son, Dr. Egil Boeckmann at Dellwood, White Bear lake.

He is survived by his widow, three daughters and a son. The daughters are: Mrs. Charles Freeman and Mrs. Clarence Freeman of St. Paul, and Mrs. Helga Suiler of Munich, Germany.

Dr. Boeckmann was a leading spirit in the founding of the St. Paul Hospital, was once chief medical officer in the Minnesota militia, and was a colonel in the medical corps during the Spanish-American war. For accomplishments in the field of surgery and medicine he received high honors in his native country, Norway.

One of the marvels to his associates in late years was Dr. Boeckmann's vigor, enthusiasm and acumen in the continued practice of his profession, despite his advancing years.

Dr. Boeckmann was born in Totn, Norway, March 25, 1849. He was the youngest of 10 children, and his father was an officer in the military service. After being privately tutored, he studied medicine at the University of Christiania. After his graduation he was a member of the staff of the hospital for lepers at Bergen, and later at St. Jorgen's hospital in the same city. His outstanding research work won him his medical degree.

As one evidence of his many services to the medical profession may be cited Dr. Boeckmann's gift 20 years ago to the Ramsey County Medical Society of his discovery of a new and improved method of preparing catgut for surgical use. Through the sale of this product the county society has been able to acquire a large library building fund, known as the Boeckmann Library Building fund.

As a means of relaxation from his strenuous medical practice, Dr. Boeckmann always had some diversion which absorbed his attention. For a time he was enthusiastic over a trout farm in Wisconsin, then over raising fancy chickens, and later, pure bred cattle.

## Dr. Alfred B. Hart

Dr. Alfred B. Hart was born in Steele County, Minnesota, in Havana township, Dec. 7, 1868. He was the son of Mr. and Mrs. Andrew J. Hart, his father being a farmer, as well as a carpenter and builder. While he was still a baby, the family moved to Owatonna, where they lived till he was four years old, when they moved to Minneapolis. There he grew up, attending the public schools in Minneapolis till he became a young man, when he

entered the Shattuck School for Boys at Faribault, where he graduated. Later he entered the University of Minnesota where he graduated in pharmacy, and became a registered pharmacist.

Alfred Hart owned and operated a drug store on Nicollet Avenue in Minneapolis for eight years a part of which time he spent in the study of medicine and surgery at the University of Minnesota, graduating in the class of 1903. He sold his drug store about a year before his graduation.

Doctor Hart was married to Miss Alice M. Sandberg, Nov. 2, 1898. Following his graduation in 1903 he moved to Cantor, Minnesota, and practiced medicine there for eight years. He also practiced in Pequot for a year and a half. He came with his family in February, 1913 to Owatonna, where he lived to the time of his death. After an illness of several months duration he passed away May 10, 1927, at his home in Owatonna, and was laid to rest in Forest Hill Cemetery. Surviving him are his wife; one son, Alfred B. Hart, M.D., Jr., who is practicing here; one daughter, Virginia M. Hart, who is attending Carleton College; a grand daughter, Eleanor M. Hart, and a sister, Mrs. Will Brown, of Minneapolis.

From time to time, as The Last Great Honor Roll of Physicians is extended, we members of the Steele County Medical Society are called upon to mourn the loss of a member. We are wholly unable, by means of any words at our command, adequately to express the sorrow we feel when one of our honored members is taken from us.

During life, we may not always appreciate the full value to us of the medical associates with whom we are thrown into daily contact, and often neglect to speak those words of commendation and of appreciation which may justly be deserved. But after the death of one of our confreres, little by little, as we take time for reflection, one thing or another brings up in our minds how much we really owed him.

Dr. Alfred B. Hart was a physician of ability. He was always a real gentleman. He was always modest about his capabilities, and never boastful of his successes. He was an honored and respected member of the Steele County Medical Society, of the Minnesota State Medical Association and of the American Medical Association.

C. W. ROBERTS, M.D.

## Jonas M. Kistler

After an illness of three days, Dr. J. M. Kistler, 71 years old, former Hennepin county coroner and for years a prominent Minneapolis physician, died Saturday, August 13, 1927, at the Swedish hospital. Dr. Kistler was born in Schuylkill county, Pennsylvania, September 5, 1856, and was a descendant of one of the old pioneer families of that state, the first representative having come to America before the Revolutionary War. His youth was spent upon his father's farm. He at-

tended the public grade schools and the Leighton high school, completing his preparatory work there, taking up the profession of teaching, which he followed for six years in the rural schools of the county. Later he entered the Keystone State Normal School to prepare himself further for his chosen profession of teaching and graduated in 1890, but before he had completed his course there, he decided to take up the study of medicine.

He then entered the Franklin and Marshall College of Pennsylvania for two years and obtained his degree of doctor of medicine from the Jefferson Medical College of Philadelphia with the class of 1883. He came to Minneapolis in June of that year and entered immediately upon the active practice of medicine.

Dr. Kistler was a member of the Hennepin County Medical Society and the Minnesota Medical Association, as well as a member of the Elks, and the Independent Order of Odd Fellows.

Elected a member of the city council from the fourth ward in 1912 he served two terms as an alderman. In 1894 he was first elected to public office when he was chosen county coroner for one year. He was again elected to the same office in 1905 and continued in that capacity for three years. For six years to 1919 he was chairman of the health and hospitals committee of the board of health and when that board ceased to exist in 1919 and its duties were placed under the newly created board of public welfare, Dr. Kistler was made a member of that body and served until 1922.

He is survived by his wife, Minnie, and four children, Dr. Alvin J. Kistler, Mrs. J. B. Greathouse and Mrs. Douglas Larson, all of Minneapolis; four brothers and one sister, A. Kistler, Seattle; D. J. Kistler, Lehigh, Pa.; Charles M. Kistler, Minneapolis, and Mrs. Ella Kistler, St. Paul.

### Dr. George H. Simon

Dr. George H. Simon of Saint Paul died Saturday, August 6, 1927, at the age of 45 years.

Dr. Simon was born May 2, 1883, at Winona, Minnesota, where he received his early education. He was graduated in 1909 from the medical school of Northwestern University and served his internship at the Milwaukee County Hospital in Wauwatosa, Wisconsin. During the following five years he was located at Tampa, Florida, where he was pathologist of the Florida State Board of Health. In 1914 he moved to Saint Paul and engaged in private practice. In 1919 Dr. Simon was made assistant director in the medical department of the Twin City Rapid Transit Company, a position he held at the time of his death.

Dr. Simon was a member of his county and state medical associations, a member of Nu Sigma Nu medical fraternity, and of the Scottish Rite and Shrine of the Masonic order.

Dr. Simon is survived by his widow, three brothers, Dr. B. F. Simon, Almon R. Simon and Dr. E. J. Simon of Saint Paul and four sisters.

## REPORTS AND ANNOUNCEMENTS OF SOCIETIES

### NORTHERN MINNESOTA MEDICAL ASSOCIATION

The annual meeting of the Northern Minnesota Medical Association will be held at St. Cloud, Minnesota, Monday and Tuesday, September 12 and 13, 1927.

The meeting is to be a combined clinical and didactic session.

Clinics will be held as follows:

1. Medical Clinic  
Dr. J. P. Schneider, Minneapolis, Minnesota.
2. Pediatric Clinic  
Dr. O. W. Rowe, Duluth, Minnesota.
3. Surgical-Pathological Demonstration  
Dr. A. A. Zierold, Minneapolis, Minnesota.  
Dr. W. A. O'Brien, Minneapolis, Minnesota,  
University of Minnesota.
4. Dermatologic Clinic  
Dr. H. E. Michelson, University of Minnesota,  
Minneapolis, Minnesota.

The following program of papers has been arranged:

1. "Osteomyelitis in the Superior Maxilla in Children, with Presentation of Two Cases."  
Dr. Thos. N. Fleming, St. Cloud, Minnesota.
2. "Cerebro-vascular Lesions in the Aged."  
Dr. L. R. Gowan, Duluth, Minnesota.
3. "Neuro-syphilis."  
Dr. W. H. Hengstler, St. Paul, Minnesota.
4. "Headaches from the Neurologic Standpoint."  
Dr. Gordon Kamman, St. Paul, Minnesota.
5. "Recent Advances in Contagious Disease Therapy."  
Dr. E. S. Platou, Minneapolis, Minnesota.  
Dr. C. A. Stewart, Minneapolis, Minnesota.
6. "Appendicitis in Childhood."  
Dr. R. L. Kennedy, Mayo Clinic, Rochester, Minnesota.
7. "Postoperative Ileus."  
Dr. C. O. Estrem, Fergus Falls, Minnesota.
8. "Inguinal Hernia Under Local Anesthesia, and Advances in Technic—A Report on 700 Cases."  
Dr. S. R. Maxeiner, Minneapolis, Minnesota.
9. "Newer Aspects in the Diagnosis and Treatment of Chronic Cholecystitis."  
Dr. M. O. Oppeggaard, Crookston, Minnesota.
10. "Newer Aspects in the Surgical Treatment of Pulmonary Tuberculosis."  
Dr. L. E. Daugherty, St. Paul, Minnesota.
11. "Pathological and Clinical Study of 400 Cases of Primary Hypertension."  
Dr. E. T. Bell, University of Minnesota, Minneapolis, Minnesota.
12. "The Various Forms of Bladder Neck Obstruction."  
Dr. F. E. B. Foley, St. Paul, Minnesota.

13. "Preoperative Care of Prostatic Patients."  
Dr. F. R. Wright, Minneapolis, Minnesota.
14. "Tularemia in Northern Minnesota."  
Dr. L. L. Merriman, Duluth, Minnesota.
15. "Principal Considerations of Heart Pain."  
Dr. W. H. Long, Fargo, North Dakota.
16. "Cardiac Neurosis."  
Dr. F. A. Willius, Mayo Clinic, Rochester, Minnesota.
17. "Medical Charities—A Medical Economic Discussion."  
Dr. C. R. Christenson, Starbuck, Minnesota.
18. "Diagnostic Dialogue."  
Dr. S. Marx White, University of Minnesota, Minneapolis, Minnesota.
19. "Diagnostic Dialogue."  
Dr. E. L. Tuohy, Duluth, Minnesota.
20. "The Doctor's Viewpoint."  
Dr. George Earl, St. Paul, Minnesota.
21. "Medical Legislation."  
Dr. W. F. Braasch, Rochester, Minnesota.

The banquet will be held Monday evening, Dr. E. L. Tuohy of Duluth acting as toastmaster. Following the banquet Dr. W. W. Will of Bertha will give the presidential address which will be followed by a medical address by Dr. C. S. McVicar of Rochester and a lay address by Bishop Bennett of Duluth.

#### AMERICAN HOSPITAL ASSOCIATION

The twenty-ninth annual convention of the American Hospital Association will be held in Minneapolis, October 10 to 14, inclusive. Headquarters will be at the Minneapolis Municipal Auditorium, where all the sessions and exhibits will be held.

The morning of the first day will be devoted to administrative affairs and registration. The Social Service section will hold its meeting in the afternoon, the formal opening of the general session of the convention to take place at 8 o'clock Monday evening in the General Assembly Hall.

Tuesday morning and afternoon will be occupied with committee reports. Dr. R. O. Beard of Minneapolis, Professor Emeritus of the College of Medicine, University of Minnesota, will give a paper at the afternoon session on "The library in the hospital."

At the banquet and reception to be held at the Hotel Radisson Tuesday evening, Dr. Morris Fishbein of the American Medical Association, Chicago, will address the guests on "The hospital and the community."

The Wednesday morning session will be devoted to committee reports with papers by Dr. Ernest P. Boas of Montifiore Hospital, New York City, and a representative of the American Association for Community Organization. Wednesday afternoon the Administrative section will discuss the subjects "Hospital income," "Hospital expense," and "Can hospital produc-

tivity be measured?" Dr. E. H. L. Corwin of the Academy of Medicine, New York, will lead in the discussion of the last mentioned subject.

Wednesday evening two sections will convene simultaneously. The Out-Patient section will meet in the General Assembly Hall and the Small Hospital section in Meeting Hall "A."

A symposium on "Tuberculosis sanatoria" has been planned for Thursday morning. Those contributing to the program are: Dr. Ernest S. Mariette, Oak Terrace, Minnesota; T. B. Kidner, New York City; Dr. A. J. Davis, Farmingdale, New York; Dr. E. P. Boas, New York City; Charlotte Jones Garrison, R. N., New York; Dr. J. A. Myers, Minneapolis.

Thursday afternoon the Construction section and Out-Patient section will hold round table discussions. Thursday evening the Nursing section and Trustee section will convene.

Reports of committees will be given at the General Session to be held Friday morning. The final session and business meeting will close the convention Friday afternoon.

Other organizations which will meet in conjunction with the American Hospital Association include the Children's Hospital Association of America, the American Association of Hospital Workers and the American Occupational Therapy Association.

#### INTERSTATE POST GRADUATE ASSEMBLY OF NORTH AMERICA

The annual meeting of the Interstate Post Graduate Assembly which met two years ago in Saint Paul will be held this year at Kansas City, Missouri, October 17 to 22 inclusive. Clinics in the various Kansas City hospitals will be held the two days in advance of this meeting.

A long list of eminent foreign authorities who will take part in the program this year appeared in the June number of the journal. The meeting this year promises to surpass those of previous years both as to the character of the program and attendance.

#### KOCH CANCER FOUNDATION

On September 22 and 23, according to an announcement just issued, the second annual convention of the Koch Cancer Foundation will take place in Chicago, one of the meetings being a joint session with the American Association for Medico-Physical Research. The American Association for Medico-Physical Research was organized in 1911 by the outstanding quack of the century, Albert Abrams. It is stated that some three hundred physicians will gather to discuss the use of the Koch remedy in cancer. But one meeting is to be a joint meeting with the distinguished members of the American Association for Medico-Physical Research. The Koch representatives should add tone to this remarkable assemblage. (Jour. A. M. A., July 23, 1927, p. 296.)

## OF GENERAL INTEREST

A daughter was born to Dr. and Mrs. H. H. Bowling of Rochester, Minnesota, Monday, August 1.

Dr. G. J. Ferreira of Aurora has been appointed county health officer of St. Louis county, succeeding Dr. H. G. Lampson, recently deceased.

Dr. and Mrs. Arnt G. Anderson of Minneapolis have returned from a three months' stay in Europe, where Dr. Anderson visited the leading medical centers.

Dr. Robert Emmett Farr, Minneapolis, who was incapacitated for several months on account of a streptococcal infection of his leg, resumed practice August 1.

Dr. Ralph D. Bergen and Miss Elizabeth Goggins of Rochester, Minnesota, were married Tuesday, August 2, 1927. Following a motor trip through the West, they will be at home in Rochester.

Dr. H. D. Diessner of Minneapolis has returned from Vienna, Austria, following a three months' study in Vienna and Berlin clinics. Dr. Diessner has resumed his practice at 341 La Salle Building, Minneapolis.

Dr. E. J. Witzemann left Rochester August 1 for Madison, Wisconsin. Dr. Witzemann will be associated with the department of physiological chemistry in the Medical School of the University of Wisconsin.

The wedding of Miss Mary Kahler and Dr. Philip S. Hench of Rochester took place Thursday afternoon, July 14, at the home of the bride's parents in Rochester. Dr. and Mrs. Hench are now at home in Rochester.

Announcement has been made of the marriage of Miss Edna Pearl Mount of Aitkin to Dr. Milton Kerlan of Moose Lake, which took place July 10, 1927, at Duluth. Dr. and Mrs. Kerlan will make their home in Moose Lake.

Dr. J. R. Coffey, formerly of Rochester, Minn., has moved to Portland, Oregon, where he will enter the practice of surgery with his father. Dr. Coffey has been a fellow in the Mayo Foundation since the summer of 1924.

Announcements have been received of the marriage of Dr. Melvin W. Binger of Rochester, Minn., to Miss Joy Amalie Hoffhine, Wednesday, July 20, at Beatrice, Nebraska. Dr. and Mrs. Binger will return to Rochester the first of October.

Dr. C. Sneed Williamson has been appointed head of the department of surgery at the University of Arkansas Medical School in Little Rock. Dr. Oliver C. Melson has lately been appointed head of the department of medicine in the same University.

Dr. and Mrs. A. H. Parks and daughter, Miss Jean Parks, are touring in Holland, Germany, Switzerland and Italy. They will take a twenty-seven days' cruise on the Mediterranean and will visit the Holy Land and Egypt before returning to the United States by way of Havre, France.

Dr. Earl Lowe of St. Paul is the inventor of a steel mesh glove which will turn the keenest blade. The glove is intended for the use of meat cutters and was devised by Dr. Lowe after he had had occasion to treat a number of cases of hand and arm cuts among packing house employees.

Dr. James M. Murdock of Franklin, Pennsylvania, has been appointed superintendent of the school for the feeble-minded at Faribault, succeeding G. A. Hanna, recently resigned. Dr. Murdock was formerly superintendent of the Polk School for the Mentally Defective in Pennsylvania.

"In recognition of his scientific work in the domain of pathology," Dr. Louis B. Wilson of Rochester has been elected an honorary member of the Czech Medical Society of Prague. This society was founded by the famous physiologist, J. E. Purkinje, who was its president until his death in 1869.

Dr. H. F. Wilkinson, who has been a Fellow in Otolaryngology in the Mayo Foundation since July, 1924, left last month for Chicago. Dr. Wilkinson has been appointed Assistant Professor in the Department of Surgery, in charge of the work in otolaryngology, at the Medical School of the University of Chicago.

Dr. W. D. Sheldon, Rochester, Minn., sailed July 14 for Europe. He attended a joint meeting of the Section on Neurology of the Royal Society of Medicine and the American Neurological Association in London from July 25 to 28. Dr. Sheldon will also spend some time in Freiburg, where his son is a student. He will be away for three or four months.

Work was begun in July on the construction of a \$200,000 building for the Children's Hospital in Saint Paul, on Pleasant Avenue near Walnut Street, replacing the present temporary structure which has housed the institution the past three years. The building is to be completed next spring. The building will accommodate 75 persons and later can be enlarged if deemed advisable.

According to an opinion of the attorney general, Clifford L. Hilton, given August 10, 1927, naturopaths must pass an examination in the basic sciences in order to practice in Minnesota. Because naturopaths were neither licensed nor registered prior to May first, when the basic science act went into effect, naturopaths must obtain a basic science certificate in order to meet the requirements of the law.

In accordance with the law passed at the last meeting of the Minnesota legislature, every physician who wishes to retain his license to practice in Minnesota must secure a certificate from the Board of Examiners in the Basic Sciences before October the first, 1927. The secretary of this Board is Dr. E. T. Bell, 110 Anatomy Building, University of Minnesota Campus, Minneapolis, Minnesota. Applications have been sent to all physicians whose names appear in the directory of the American Medical Association as residing in Minnesota. Members of the State Association are requested to send in the names of any doctors they may know who have not received applications.



## NEW AND NON-OFFICIAL REMEDIES

The following article has been accepted by the Council on Pharmacy and Chemistry:

LEDERLE ANTITOXIN LABORATORIES:

Erysipelas Streptococcus Antitoxin (Lederle) Unconcentrated

### TRUTH ABOUT MEDICINES

*Crotalus Antitoxin*.—An antitoxic serum prepared by immunizing animals against the venom of snakes of the crotalus family. Evidence has accumulated to show that the venom of certain snakes may be neutralized by the employment of a serum obtained from animals that have been injected with venom from a snake of the same family. *Crotalus antitoxin* is used to neutralize the venom injected by the bite of members of the crotalus family. The serum is administered intramuscularly, subcutaneously and in certain cases it may be administered intravenously.

*Antivenin (Nearctic Crotalidae)*.—North American Anti-Snake-Bite Serum.—An antitoxic serum prepared by injecting horses with venoms from serpents of the North American species of the family *Crotalidae* (Rattlesnake, 75 per cent; Copperhead, 12½ per cent; and Water Moccasin, 12½ per cent). It is claimed to have neutralizing effect against the venom of the species represented. The serum is marketed in syringes containing 10 c.c. (a single dose). H. K. Mulford Co., Philadelphia. (Jour. A. M. A., July 2, 1927, p. 29.)

*Erysipelas Streptococcus Antitoxin (Lederle) Unconcentrated*.—An erysipelas streptococcus antitoxin (New and Non-official Remedies, 1927, p. 337) prepared by immunizing horses by subcutaneous injections of the toxic filtrate obtained from broth cultures of the erysipelas streptococcus, or by intravenous injection of cultures of the erysipelas streptococcus obtained from typical cases of erysipelas. It is administered in early cases of moderate severity in dosage of 12 c.c. intramuscularly; in severely toxic and late cases, 36 c.c. to 48 c.c. intramuscularly, or 24 c.c. to 36 c.c. intravenously. This product is marketed in syringes containing 12 c.c. Lederle Antitoxin Laboratories, New York. (Jour. A. M. A., July 30, 1927, p. 373.)

### THE "ADJUSTO" ("JUVENATOR")

This is another indecent swindle barred from the mails. One G. R. Damiani, who seems to have done business variously under such trade names as G. Lotto, Olds Appliance, Wisett Manufacturing Co., and Sampson Manufacturing Co., all of St. Louis, Mo., have exploited the device called the "Adjusto" and the "Juvenator." Now a fraud order has been issued against the Sampson Manufacturing Company and G. R. Damiani. (Jour. A. M. A., Feb. 12, 1927, p. 501.)

## CASE REPORTS

Members are requested to report interesting and unusual cases for publication in this department. Many cases reported at hospital staff meetings and similar meetings are very instructive and worthy of publication.

### BLOOD TRANSFUSION INTO THE LONGITUDINAL SINUS\*

REPORT OF CASE

LESLIE L. NUNN, M.D.  
Eveleth, Minnesota

Blood transfusion in infants has long been regarded as a difficult procedure and to be considered only as a last resort. Consequently when Helmholz in 1915 introduced the method of transfusion into the superior longitudinal sinus he opened up a new field and made it possible to introduce directly into the infant's vein the blood which had heretofore been introduced subcutaneously, intramuscularly or intraperitoneally.

The following case illustrates the feasibility of utilizing the longitudinal sinus of infants provided the anterior fontanelle has not closed:

G. K., female, ten and a half months old, was taken ill March 10, 1927, with bloody stools, weakness and anorexia. The parents soon noticed that the baby was becoming very pale but had noted no marked loss of weight. I was called to see her on March 24, 1927, and found a rather plump baby of normal size for the age but so pale she appeared practically bloodless. Head, neck and thorax were essentially negative. The liver and spleen were easily palpable. Stool examination was positive for blood; hemoglobin was 12 per cent Dare; erythrocytes 1,660,000; small lymphocytes 48 per cent; large lymphocytes 7 per cent; transitionals 2 per cent; polynuclear neutrophils 43 per cent; there was considerable anisocytosis and poikilocytosis; coagulation time 5 minutes; temperature 99.6 rectal. Her blood belonged to Group III, which was compatible with the father's blood. Diagnosis: Melena with severe secondary anemia.

On March 28, 1927, she was given 60 c.c. of whole blood from the father. The anterior fontanelle had become cartilaginous but was pierced without great difficulty with a 24 gauge Luer needle attached to a 20 c.c. syringe. On entering the sinus a free flow of blood was at once obtained by drawing back on the plunger. Using a modified Lindeman technic, blood was taken from the median basilic vein of the father and introduced slowly into the sinus. There was immediately a perceptible change in the color of the child, the lips and mucous membranes becoming very pink. There was no chill, fever or other reaction following transfusion.

One week later the patient was given 80 c.c. of whole blood into the superior longitudinal sinus by the

\*From the More Hospital, Eveleth, Minnesota.

same method without reaction or complication. Four days later her blood picture had improved to such an extent that it was decided unnecessary to repeat the transfusion unless the count began to drop. A blood count was done weekly, the results of which are shown in the accompanying table. The infant's color improved rapidly, and the appetite improved until at the present time she appears as a practically normal child for that age. It was originally planned to give her a transfusion each week but such rapid improvement was noted that only two were necessary.

	Mar. 26	Mar. 28	Apr. 1	Apr. 4	Apr. 12	Apr. 19
Hemoglobin	12%	16%	18%	24%	24%	27%
Erythrocytes	1,660,000	1,710,000	1,780,000	2,566,000	2,870,000	2,930,000
Coagulation time	5 min.					
Color index	.37	.47	.53	.48	.45	.46
Leukocytes	9,000					8,200
Small lymphocytes	48	After		After		59
Large lymphocytes	7	first		second		6
Transitional	2	trans-		trans-		5
Polymorphs	43	fusion		fusion		30
Eosinophiles						

The accompanying table shows the blood picture during the period of treatment and observation of the patient. At all times there was a slight degree of anisocytosis and poikilocytosis and an occasional microcyte and macrocyte.

**Technic.**—The top of the infant's head is shaved and prepared with benzine, iodine, and alcohol. The arm of the donor is prepared and a tourniquet applied. Three basins of sterile normal saline are at hand to wash out each syringe as it is used. I use three 20 c.c. Luer syringes and No. 24 gauge needles. By wrapping the infant in a sheet or blanket with the arms at the sides and having a nurse or assistant hold the head firmly the danger of missing the sinus is minimized.

The needle attached to an empty syringe is inserted through the anterior fontanelle to the depth of about 1 cm. pointing in the direction of the external occipital protuberance. The needle should, of course, have a short bevel to avoid puncturing the opposite wall of the sinus. When blood appears in the syringe by gently drawing on the plunger, the needle is held firmly, the syringe is removed and handed to the nurse, who washes it out in saline solution. In the meantime the assistant has filled a 20 c.c. syringe from the vein of the donor and passes it to the operator, who slowly injects it into the sinus of the infant. Great care should be taken in injecting the blood; back pressure on the plunger should be tried at frequent intervals to be sure one is still within the sinus.

Too rapid injection is likely to cause intracranial pressure which may result fatally. Consequently it is best to inject at the rate of 10 c.c. per minute.

In this manner, from 60 to 100 c.c. of blood may be introduced into the infant's venous system within a few minutes—I believe, more easily and efficiently than by any of the other methods.

**Conclusions.**—By utilizing the superior longitudinal sinus, the problem of transfusion in infants becomes greatly simplified. Certainly the external jugular is second choice, but lack of coöperation on the part of

the patient usually makes this a rather difficult procedure. The introduction of blood into the peritoneal cavity is accompanied by a certain amount of risk and the results obtained by such a procedure are not as satisfactory as introducing the blood directly into the infant's vein. Intramuscular injections must necessarily be relatively small amounts and are unsatisfactory because of the tendency to form hematoma which easily become infected.

The technic is simple, rapid and efficacious. I believe this method is superior to the citrate method because it is (1) more quickly done and (2) the total amount injected is less than in using the citrate method; the introduction of relatively large amounts of fluid into an infant's vein is not particularly desirable when there is no loss of body fluids.

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## RETAINED PLACENTA IN A BICORNUATE UTERUS\*

## Report of Case

ROBERT E. McDONALD, M.D.

Minneapolis

E. C., a primipara aged 19, entered the Minneapolis General Hospital in labor June 18, 1927. Labor had begun with regular pains starting shortly after midnight June 18th and continued throughout the day with very little progress.

Physical examination revealed a well developed woman, apparently normal in every respect. Pelvic measurements were as follows: Interspinous 28.0 cm.; Intercristal 30.5 cm.; Intertrochanteric 34.0 cm.; External Conjugate 21.0 cm. By abdominal and rectal examination the position of the fetus was determined to be O. L. A. During the first twelve hours of labor, pains were very ineffectual and little progress was made. The following five hours, however, brought good progress and the patient was delivered of a normal female infant at 5:25 P. M., seventeen hours after the onset of labor.

Soon after delivery, a slow but steady flow of bright red blood began and was partially controlled by gently massaging the fundus. In doing so, considerable irregularity in the fundus was noted. A central notch or depression could be felt by abdominal palpation and the uppermost transverse diameter of the uterus was greater than in the normal parturient uterus.

After several unsuccessful attempts to express the placenta by Crede's method, which were begun twenty minutes after delivery, it was decided to await spontaneous separation and to control the hemorrhage with pituitrin. One half hour after the baby was born, an ampule of pituitrin was given in an effort to stop the hemorrhage, which was now becoming more active. This lessened the flow of blood for fifteen minutes, when it again began, this time to an alarming degree. Preparation was made for manual removal of the

placenta, which, it seemed probable, had partially separated but remained in the lower uterine segment. Upon introducing the gloved hand into the uterus the placenta was found to be tightly adherent along the right wall and in the apex of the right cornu of a distinctly bicornuate uterus. A midline septum extended downward from the superior aspect of the fundus about one third of the length of the uterine cavity. Separation of the placenta was accomplished without much difficulty. This was done by inserting the fingers between the placenta and the wall of the uterus and gently peeling it away from the lateral wall of the corpus and right cornu. Approximately two liters of blood had been lost but all bleeding stopped following delivery of the placenta. Subsequently the patient was treated for shock and acute anemia.

The puerperium was markedly febrile in type with a temperature range from 98° to 102° daily for four days. From the third day to the tenth, the lochia was foul and profuse, but the temperature gradually dropped to very nearly normal. The patient left the hospital, against advice, on the fourteenth day. Her condition at this time was good and post-partum examination revealed a fairly well involuted uterus in which two distinct horns could be outlined by bimanual examination.

Family history and past history of disease were negative. Menstruation was established at the age of thirteen and occurred regularly every twenty-eight to thirty days, lasting five days, up to September 7, 1926, when she missed her first period and had none thereafter. For the last few years, the patient has been seized with violent lower abdominal cramps, confined principally to the right side, on the day preceding the onset of each menstrual period. The pain radiated to her back and extended down the right thigh. Following the pain, which lasted not more than one to two hours, a sense of numbness came over her and, to use the patient's own words, her "right leg became paralyzed." She would then collapse and have to be carried to bed. After the menstrual flow began, the cramps and general discomfort disappeared and a normal period then ensued.

\*From the Obstetrical Service, Minneapolis General Hospital, Minneapolis, Minnesota.

## VACCINATION OF THE NEW-BORN AGAINST TUBERCULOSIS WITH BACILLUS CALMETTE GUÉRIN

The history of the vaccination of new-born infants against tuberculosis with *Bacillus Calmette Guérin* (abbreviated B C G) since July 1, 1924, in France and other countries over a period of two and one-half years to Jan. 1, 1927, has just been reviewed by Professor Calmette with his co-workers Guérin, Nègre and A. Boquet at the Pasteur Institute in Paris. The vaccine is a living tubercle bacillus of bovine origin rendered avirulent for all animals by 230 passages on bovine bile medium. For the preparation of the vaccine, the B C G organism is transferred from the bile me-

dium to a synthetic medium, cultured, and an emulsion of bacilli prepared. Two c.c. of the finished preparation constitutes a dose to be fed to an infant in milk. Three doses are given. A total of 43,283 children have been thus vaccinated. The various papers which are reviewed may be said to represent the culmination of the life work of a revered scientist. They may open a new era in the eradication of tuberculosis and in the knowledge of its epidemiology. For the United States, however, and for all countries it would seem wise to hold in check uncontrolled enthusiasm for its use until those charged with the responsibility of safeguarding the public have carefully proved that the method and the premises are sound. (Jour. A. M. A., July 9, 1927, p. 115.)

## PROGRESS

Abstracts to be submitted to Section Supervisors.

Members are urged to abstract valuable articles which they run across in their reading and send the abstracts to the physicians in charge of the respective sections. In order to avoid duplication it would be well to communicate with one of the section supervisors before the article is abstracted.

## SURGERY

### SUPERVISORS:

DONALD K. BACON,  
LOWRY BLDG., ST. PAUL

VERNE C. HUNT,  
MAYO CLINIC, ROCHESTER

**CAUSES OF DEATH FOLLOWING OPERATIONS FOR PERFORATED GASTRIC AND DUODENAL ULCERS:** Joseph B. Stenbuck (*Annals of Surgery*, 1927, LXXXV, 713-721). It is the general impression that the important factors in determining the death of patients suffering with perforated gastric and duodenal ulcers, are, first, the length of time which has elapsed between the rupture of the ulcer and operative interference; secondly, the proximity of the time of perforation to the ingestion of food; and, thirdly, the rapidity with which the operation is performed. There are other factors, however, that are just as important.

The records of eighty-eight patients were studied—twenty-seven, or thirty-one per cent, died.

The mortality rate was found to increase almost in direct ratio to the number of hours elapsing between rupture and operation. Not a single patient died when operated upon within six hours after perforation. In some cases, operated upon after the lapse of more than twelve hours, there was little or no spilling of stomach contents and only a localized inflammatory reaction. In this type of cases the patient may recover even though operated upon long hours after perforation.

The majority of surgeons are in favor of the simplest form of operation, which is closure of the ulcer in two or three layers, reserving gastro-enterostomy for those cases with obstruction.

The value of drainage is frequently discussed. It is the impression of the author that after the source of the peritoneal soiling is eliminated and the proper toilet of the abdominal cavity is performed, little help may be expected from drainage devices.

In general small perforations were attended with recovery while large perforations allowed of a higher mortality. The mortality rate increased with the ages

of the patients and in the presence of chronic cardiovascular, kidney, and pulmonary disease.

The deaths were divided into three groups according to time they occurred after operation: Group I—Those patients who died within three days after operation. The preponderant factor is shock, chemical and bacterial in origin. Group II—In the second group the patients die of a generalized purulent peritonitis. They pass through the period of shock very quickly, but after a few days the signs of peritonitis appear and the patients die. Group III is the abscess group. The abscess may be suppurative or within the liver. In the latter, the symptoms appear at the end of the second or third week, with pain in the abdomen, a rise in temperature and pulse rate, and sometimes a chill. The condition does not respond to surgical treatment and the patient dies in one to two months post-operative. Death from abscess of the liver occurred twice in the series and in a similar number the cause of death was a suppurative abscess.

HAROLD E. SIMON, M.D.

**SOLITARY CYSTS OF THE KIDNEY:** Andrew Fullerton (*Brit. Jour Surg.*, 1927, XIV, 629-633). Solitary cysts of the kidney are rare. A total of 99 cases have been reported in the literature, including the author's case.

Solitary serous cysts should be differentiated from solitary hemorrhagic cysts which have a different etiology and structure. The serous type are probably retention cysts, due to constriction of the tubules by sclerosis following chronic inflammatory changes. They arise from the cortical portions of the kidney and very rarely communicate with the calices or pelvis. They are usually unilateral and vary in size from that of a hazel-nut to that of a man's head or larger. The age incidence is usually between 30 and 60 years and the condition is more frequent in females than in males.

Symptoms may be entirely absent or a tumor in the abdomen may be accidentally discovered, which, if large may exert pressure on the diaphragm or abdominal contents, giving rise to dyspnoea or gastro-intestinal symptoms. Pain, when present, may be constant or intermittent and may simulate renal colic. The urine may be normal; rarely blood or pus may be found in it.

Pyelography will differentiate between hydronephrosis and cysts. Cysts, according to Braasch and Carman may give rise to (1) shortening of the adjacent calices; (2) flattening of the nearest portion of the true pelvis; and (3) changes in the axis of the kidney. A normal pyelogram will not wholly exclude the presence of a cyst.

Cuneiform resection is the method of choice in a suitable case. Nephrectomy will be required when the cyst is large and involves a large area of the kidney or when other cysts are present.

HAROLD E. SIMON, M.D.



**THE UNDESCENDED TESTIS:** Owen H. Wangenstein (*Archives of Surgery*, March 1927, 663-731). Undescended testes in the human adult are practically always aspermatic. Fixation of the testis to the lowest portion of the scrotum, preferably between the ages of 9 and 11 years, will enable it to develop normally. Only rarely will transplant after the age of 16 be of any benefit. If descent is incomplete at the end of the first year of life, it seldom occurs. The probable explanation for the necessity of scrotal location for a normal testis is the scrotum's temperature.

Mobilization of the testis sufficient for orchidopexy can be obtained by the separation of the testis from the vaginal process, freeing of vessels and vas deferens into the abdominal cavity, and the separation of the fascial coverings of the cord. Suture of the testis to the bottom of the scrotum is necessary, and a suture could be run through the bottom of the scrotum and tension by mechanical fixation used to maintain the physiologic position, because even though stripped of the cremaster and its fascial coverings the testis tends to retract.

Other surgical procedures possible are removal of the testis and abdominal reposition.

Ligation of the vas deferens does not result in atrophy of the germinal cells nor in hypertrophy of the interstitium. Section of the internal spermatic artery is followed always by diminution in size of the dog's testis and by scattered degenerative changes in the tubules; spermatogenesis still contains. Ligation of the internal spermatic artery and all veins in the pampiniform plexus results in total destruction of the testis. Theories of rejuvenation based on ligation of the vas, or homo, or hetero transplant of the testis are not rational.

The above conclusion are based upon microscopical study of the normal and undescended human testis, and testes of dogs following experimental operative procedures.

Complications of undescended testes may be—

1. Pain. A painful inguinal testis that cannot be gotten into the scrotum without vessel section may as well be removed, for it frequently continues to be painful after abdominal reposition.
2. Torsion, with strangulation. This may also occur if the testis is placed in the peritoneal cavity.
3. Hernia, which accompanies 57 per cent to 100 per cent, according to different statistics.
4. Malignancy, which is more likely in the non-descended testis. Scrotal fixation does not lessen its occurrence, but it is not of sufficient frequency to warrant removal of the testis.

Castration is rarely indicated in the uncomplicated undescended testis.

J. H. BOWLES, M.D.

**SARCOMA OF THE RECTUM:** J. H. Weeks (*Surg., Gynec. and Obstet.*, 1927, 44, 478-482). Excluding the melanotic type, rectal sarcoma appears to be exceedingly rare. A review of the literature reveals

100 cases. The melanotic type is twice as frequent as are the other varieties.

The author reports one case. Sarcomata, as highly vascular, malignant neoplasms arising in connective tissue, may originate in the subserous, muscular or submucous groups of the rectum. They originate as small nodular masses which later ulcerate. The diagnosis is seldom made, and it is generally mistaken for carcinoma. They are usually situated low down in the rectum, just above the anal opening. They develop rapidly, show a tendency to pedunculate and to obstruct the rectal lumen, but may not ulcerate until late. They may be confused with hemorrhoids, leucic strictures and tuberculous lesions.

The diagnosis between carcinoma and sarcoma is of more academic interest as the treatment in either lesion would be the same, viz., early radical removal.

HAROLD E. SIMON, M.D.

**LA CHIRURGIE DE LA DOULEUR (THE SURGERY OF PAIN):** R. Leriche (*La Presse Médicale*, 1927, 32, 497-499). There exists today a surgery of pain. Its object is to relieve the patient who suffers from one of those syndromes, consisting of pain but unknown in origin; or to relieve the pain of an incurable disease such as tabes or cancer. It is true that there are drugs to relieve such patients, but their dosage must be increased constantly and the patient is never secure from the tyranny of his pain.

The surgery of pain is simple in a patient with a known disease which in itself is an indication for operation, for example, it is easy to relieve the pain of a peristalsis from obstruction, the headache of an intracranial pressure, or the tension of an inflammatory condition. When there is no organic lesion, however, the problem is a difficult one.

The anatomic mechanism of pain is a complex one. Its origin may be central or peripheral, its location may be deceiving, its manifestations are varied. Errors in diagnosis are to be guarded against in order not to confuse the treatment of pain of organic origin with the pain not having a recognizable organic basis. One is never justified in operating at random.

Another difficulty arises from the existence of two types of pain, from the physiological standpoint. These are the cerebro-spinal and sympathetic types. The first is constant in location, and is intermittent; of this type, trigeminal neuralgia is the most typical example. Sympathetic pain is less constant in location, it is diffuse, is constantly referred to new areas and is affected by the emotions, et cetera.

The essentials of surgical procedures for the relief of pain are that they neither endanger life nor cripple the patient. One should be conservative in removing ganglia indiscriminately. The author seldom cuts the posterior roots for pain because of the hypertonic condition and the edema which results. He also does not approve cordotomy. Section of the fibers is often not complete, there is residual pain, and it is not rare to have disturbances in sphincter control and some

pyramidal tract symptoms. He believes it should be reserved for cancer patients. Sympathectomies must be performed by skilled operators to avoid injury to adjacent structures.

The choice of patients is difficult. If one waits too long he has to deal only with morphine addicts and incurables. Repeated operations are to be avoided. After such an operation it is essential that the patient be encouraged regarding his prognosis.

HAROLD E. SIMON, M.D.

**A CASE OF ALBERS-SCHONBERG'S DISEASE:** H. R. Sear (*Brit. Jour. Surg.*, 1927, XIV, 657-660). Albers-Schonberg's disease is an extremely rare condition. The typical features of the disease are the extremely dense changes in all the bones, especially the ends of the diaphyses; with marked anemia, due probably to the diminution of the medullary spaces; enlargement of the spleen and liver; pressure on the cranial nerves, with optic atrophy, nystagmus, et cetera; hydrocephalus; interference with dentition; and necrosis of the jaws. A case is reported which presented all the classical features.

The radiographic features of this disease are the generalized nature of the bony lesion, all bones without exception are involved, especially the ends of the diaphyses which assume an extremely dense structure, hence the name, "marble bones."

HAROLD E. SIMON, M.D.

**ENTEROVESICAL FISTULA:** F. Gordon Craig and R. K. Lee-Brown (*Surg. Gyn. and Obst.*, 1927 44, 753-755). This condition is comparatively rare. The communication is usually between the terminal portion of the large intestine and the base or posterior vesical wall. It occurs three times as frequently in females as in males.

It may be traumatic or non-traumatic in origin. The traumatic variety may result from a wound or accident, or from surgical procedures. The non-traumatic variety may arise from inflammatory processes secondary to diverticulæ, stones, strictures, ulcer, or neoplasm.

The symptoms consist of the passing of gas and feces per urethra, and urine per rectum. There is generally some cystitis. Cystoscopy and cystography furnish valuable information in some cases. The prognosis depends upon the cause.

The treatment is surgical. The essential step is the obliteration of the tract and for this purpose abdominal section in most cases offers the best approach. The bladder and intestine are separated and the openings in each are closed. Colostomy and cystostomy may be used as palliative measures.

HAROLD E. SIMON, M.D.

## PEDIATRICS

### SUPERVISORS:

CHESTER A. STEWART,  
LA SALLE BLDG., MINNEAPOLIS

ROY N. ANDREWS,  
MANKATO CLINIC, MANKATO

**CELIAC DISEASE—A SUMMARY OF PRESENT CONCEPTIONS:** Sandor A. Levinsohn, M.D. (*Arch. of Ped.*, June, 1927). The dietary during infancy appears to have no bearing on the later development of celiac disease. Hunger, relative or absolute, brought about through the parents or the physician, and too frequently repeated, or thorough anorexia, appears to be far more important.

A very vivid description is given by Lehndorff and Mautner: pale face with a peculiar expression which is a mixture of irritability, distrust and fatigue, thin legs and prominent abdomen. The face is never as thin and emaciated as the extremities.

Distended abdomen is present in all cases. Paleness and anemia is a constant early sign. Osteoporosis is common, caused perhaps by a negative calcium balance or a B. avitaminosis. Fatigue is a cardinal symptom and may be extreme. The stool is the most characteristic feature. It is soft, unformed, but not watery, more in quantity than can often be accounted for by the food intake. It has an intensely foul odor as though the food had been entirely putrefied rather than digested. The light color may be due to lack of bilirubin, abundance of fat, or the reduction of bilirubin to urobilin.

Water, fat, carbohydrate, protein and salts are very poorly resorbed through the intestinal tract. Calcium, organic acids, and perhaps other products are either excreted into the intestines in larger amounts than normal, or are poorly resorbed.

Inability of the cells to normally take up water may explain many celiac symptoms, as growth itself is dependent upon this property. The constant thirst and tendency to edema is also significant of disturbed water balance. Growth appears to be disproportional, the inhibition affecting more the long bones than the head. The most frequent complication is tetany.

In principle, the dietary should have the fat reduced as much as possible, milk omitted or served as protein milk, protein fed in various forms and with as many changes as possible, carbohydrate offered in the most unfermentable forms, and roughage or cellulose-bearing foods omitted. Bananas are an exception, as recommended by Sydney Haas. Fruits and vegetables, except as powders or extracts, should not be permitted.

R. N. ANDREWS, M.D.

**A REVERSAL OF THE NORMAL CONCENTRATION OF THE URINE IN CHILDREN HAVING ENURESIS.** Aaron Friedell, M.D. (*Amer. Jour. of Diseases of Children*, May, 1927). The observations were made on thirty-nine patients at the university dispensary. Cases in which the urine was abnormal were not included in this series. The entire group was subjected to the same regimen of treatment, which included restricting the fluid intake after 4 p. m., abstaining from tea, coffee, and highly seasoned food and retiring to bed at 7:30 p. m. on a hard mattress. In addition, each child was given a hypodermic injection of 1 c.c. of sterile water once a week and was assured that this treatment would result in a cure. They were warned, however, that should a relapse occur, additional injections would be administered.

Twenty-nine of the children included in this series were relieved of their condition without a relapse over a period of six months following from one to three injections of 1 c.c. each of sterile water. These prompt and permanent cures, however, occurred in children who had a greater concentration of urine at night than during the day.

The occurrence of a reversal of the concentration of the urine in certain patients having enuresis to date has escaped attention. The existence of this condition possibly is an important etiologic factor, especially in patients failing to respond to psychic therapy.

In patients whose urine showed a persistent reversal of concentration, when the specific gravity of the day specimen was greater than the night, the treatment proved a failure.

R. N. ANDREWS, M.D.

**DIATHERMY IN THE TREATMENT OF PNEUMONIA:** R. P. Forbes, M.D. (*Arch. of Pediatrics*, June, 1927). The loosening of the secretions and the restful sleep following treatments must be of definite value in permitting the favorable termination of the pneumonia. Many infants go to sleep during a diathermy treatment and perspire freely for some time after treatment. A fall in temperature is sometimes noted and the pulse is usually slower and of better quality.

Careful use of diathermy if thymus hypertrophy is suspected is advised.

A study of all of the case records of pneumonia in the hospital for two years preceding the use of diathermy compared to the past year in which most of the cases of pneumonia have received diathermy treatment, shows that the mortality of both lobar and bronchopneumonia has been reduced about one-half in those cases receiving diathermy treatment.

Duration of the disease is apparently unaffected by diathermy. Complications were strikingly reduced in the past year's series in both lobar and bronchopneumonia treated by diathermy. Except for the use of diathermy, usually twice daily, the same routine measures have prevailed in the treatment of pneumonia.

R. N. ANDREWS, M.D.

## EYE, EAR, NOSE AND THROAT

### SUPERVISORS:

VIRGIL J. SCHWARTZ,  
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E. L. ARMSTRONG,  
FIDELITY BLDG., DULUTH

**AN OPHTHALMIC RADIATION LAMP:** Duke-Elder (*Brit. Jour. Ophth.*, February, 1927). Diseases of the outer coat of the eye, with its adnexa, have been treated with good results by means of the ultra-violet lamp. These diseases include blepharitis, chronic conjunctivitis, corneal ulcers of various types, including recurrent hypopyon and the stubborn marginal ulcers; good effects have also been produced on recent corneal opacities, phlyctenular or eczematous keratitis, tuberculous keratitis, episcleritis and iritis with nodules on the anterior surface of the iris. Except for the last mentioned condition, this form of therapy must not be used for treatment of an intraocular disease because the action of the radiant energy of various wavelengths, especially the heat rays, upon the lens may start up a cataract, particularly if the lens in question happens to be predisposed to such alteration. The attempt to cure a beginning or partly developed cataract by this method is wholly unjustified, and is more apt to hasten than to prevent or delay the maturation of the cataract. Ultra-violet therapy, unfortunately, has come to be regarded by much of the laity as a panacea for all ills, and this view must be combated.

VIRGIL J. SCHWARTZ, M.D.

**THE SEX-INCIDENCE OF SOME DISEASES IN THE UPPER AIR AND FOOD PASSAGES:** Sir St. Clair Thomson (*Practitioner*, February, 1927). Since Aristotle and Catullus there has been recognized a close association between the nose and throat and the sex organs. Voice changes accompanying development and involution of the genitalia, have long been well known. The boy's voice normally "cracks" at puberty; if castrated, the eunuchoid voice persists. Late in male life, the sex apparatus having lost its function long before the organs which simply maintain life, the voice again becomes a piping childish treble. The female voice undergoes no marked change until the menopause, when it is apt to lose its charm and vigor; occasionally, also, sensory throat neuroses occur at this time.

*The Nose.*—At puberty, boys are more subject to spontaneous epistaxis than girls. "Vicarious menstruation" is extremely rare. Deformities of the nasal septum are far more frequent in males because of the greater incidence of nasal trauma among them. Ozena is more frequent in females and is accentuated at the menstrual periods.

*Naso-Pharynx and Pharynx.*—Tonsil and adenoid affections and tuberculosis in this region are about

equally divided between the sexes. Tertiary syphilis is more common in males, probably because of tobacco irritation.

**The Larynx.**—All affections of the larynx, both acute and chronic, are more common in males than in females. No good reason has been advanced for this; alcohol and tobacco would not explain the inequality during childhood. However, the greater sex-activity of the male and its influence upon the larynx may account for some of the disproportion.

**Tuberculosis.**—Formerly, it was thought that males were more predisposed to laryngeal phthisis than females. This is not true. More males than females have been found thus afflicted simply because of the greater exposure, direct and indirect, of the former. As woman leaves her comparatively sheltered life and enters the same occupations and circumstances as man, the incidence of laryngeal tuberculosis will be found the same in the two sexes.

**Cancer.**—Malignant growths of the tongue, fauces, soft palate, tonsils and larynx are common in males and very rare in females. However, in the hypopharynx (the post-cricoid area), cancer is much more frequently found in women than in men; from this point downward in the esophagus, the incidence in women becomes smaller and that in men greater. None of these facts can be adequately explained.

Functional aphasia, aphonia, and dysphagia used to be found much more frequently in women than in men, but since the war the incidence of the first two affections has become greater among men.

VIRGIL J. SCHWARTZ, M.D.

**METASTATIC CARCINOMA OF THE CHOROID:** Thomas and Sladden (Lancet, March 12, 1927). A very unusual case of bilateral metastatic carcinoma of the choroid came under observation. A male, congenital deaf-mute aged 39, complained of total blindness in the left eye for the past few weeks. On examination the only pathology found was a swollen left optic nerve-head. The right eye was normal.

A month later the left disc was white and atrophic; below and temporally was a large, flat detachment, while nasally was a smaller detachment. These gradually spread over the entire fundus, and transillumination began to disclose a solid mass beneath the retina. Refusing enucleation he returned after several weeks, complaining of the right eye; there was found in this eye, then, a small, flat detachment above and nasally. About a month later he was sent back blind and emaciated, with hemoptysis, tenderness over the liver, and signs of a chest tumor. Some two months later he returned, complaining of severe pain in his now glaucomatous left eye. The retina of the right eye was also detached, but glaucoma had not yet supervened. The left eye was removed and a diagnosis of carcinoma made. Five weeks later the patient died, and a post-mortem examination showed an early basal leptomeningitis and large mediastinal tumors extending into both lungs, with metastases in the lungs, liver and aortic glands. The sclera and choroid of the right eye from optic nerve to limbus on the nasal side, were invaded by a tumor mass averaging four mm. thick, apparently of the same type of bronchial cells as the growths in the mediastinum and left eyeball, only of a more vigorous, rapid growth.

Carcinoma of the choroid is almost always flat, and does not often cause glaucoma. One third of reported cases have been bilateral; otherwise, the left eye is involved more often than the right, probably by way of the lymph channels. The lung is one of the most frequent primary foci of choroidal carcinoma.

The left eye, previously enucleated, presented a solid tumor which enclosed the optic nerve behind the eyeball, reaching a diameter of about two centimeters. The choroid was completely and symmetrically invaded throughout its posterior portion. It was noted that the growth became increasingly malignant as it spread from the lungs to the left eye, thence to the right.

The age incidence of metastatic carcinoma of bronchial origin may be rather low: the case here discussed was 39 years of age, while others as young as 27 have been reported.

VIRGIL J. SCHWARTZ, M.D.

#### PLASMOCHIN

The Council on Pharmacy and Chemistry issues a preliminary report on "Plasmochin," a synthetic quino-line derivative, developed in Germany and proposed for use in the treatment of malaria. For many years attempts have been made to find a substitute for quinine that would be cheaper, less bitter, less toxic and more specific than quinine. Plasmochin appears to be a step forward in this search, though it is not a full solution of the problem of eradicating malaria. It is said to act by destroying some of the forms of the malarial parasite and by inhibiting the development of others. Those who have studied the drug appear to agree that the new drug is most effective on the quartan forms of malarial parasite, that in tertian ma-

laria a combination of the new drug with quinine is more effective, and that in birds the drug is sixty times more effective than quinine. The Council points out that results derived from the study of bird malaria have chiefly a suggestive value, and that further clinical study must be made before any optimistic estimate of its value in human beings can be formed. The Winthrop Chemical Co. has imported the drug for clinical trial and this is labelled to be "ethylaminoquinoline tannate." The firm states that the product when placed on the market in this country will be manufactured here. The Council has postponed further consideration of Plasmochin until clinical evidence concerning the efficacy, safety, and dosage of the product is available. (Jour. A. M. A., July 9, 1927, p. 113.)



## BOOK REVIEWS

## BOOKS RECEIVED FOR REVIEW

**POTASSIUM AND TARTRATES.** A review of the literature on their physiological effects. Ralph W. Webster, Ph.D., M.D. Digest and bibliography of the literature by W. A. Brennan, A.B. 168 pages. Cloth, \$2.50. Chicago: The Commonwealth Press, 1927.

**THE NEW MEDICAL FOLLIES.** Morris Fishbein, M.D. 235 pages. Cloth, \$2.50. New York: Boni and Liveright, 1927.

**MANUAL OF THE DISEASES OF THE EYE.** For students and general practitioners. Charles H. May, M.D. 12th edition, revised. Illus. 445 pages. Cloth, \$4.00. New York: William Wood and Company, 1927.

**HISTORY OF MEDICAL PRACTICE IN THE STATE OF ILLINOIS.** Committee on Medical History, Illinois State Medical Association, Charles I. Whalen, M.D., Chairman. 2 vols, \$10.00. 714 pages. Illus. Chicago: Illinois State Medical Society, Medical and Dental Arts Bldg., 185 North Wabash Avenue, 1927.

Doctors who lived formerly in Illinois, or who are descendants of pioneer physicians of the "Illinois country," will hear with interest that Volume One of the "History of Medical Practice in the State of Illinois" is ready for delivery.

The history has been written under the supervision of a committee appointed by the Illinois State Medical Society as a commemoration of its seventy-fifth anniversary but more especially to make a living tribute to those valiant men of the medical profession who played so able a part in the exploration, settlement and development of the Illinois country.

In this first volume of the history are set down events from the earliest available knowledge of conditions in the Illinois country, along through the days of the Aborigines, up until the year 1850.

In the second volume (now in preparation), narration continues up until the present time. Future years will bring other volumes so that this history will be an ever virile monument to the men and incidents it would honor.

Research of years resulted in an opulent supply of material from which to compile this history and has evidenced to an almost unbelievable degree the vital part played by physicians in every angle of the exploration, settlement and development of a country that is one of the richest and most influential sections of the richest country in the world.

It must be remembered that originally the Illinois country encompassed a territory far greater than the area now known as the state of Illinois. Wisconsin, Indiana, Missouri, Kentucky and Iowa, as well as what is now Illinois, and even some sections of Ohio, fell into that primitive epitome of the Illinois coun-

try. In the southern part of the state it was well into the Nineteenth Century before Missouri and Illinois ever acknowledged the natural divorce of interests made by the Mississippi river. Because of this, naturally enough, close interest in this history extends to physicians or to their descendants in practically every state in the Mississippi Valley or contiguous thereto.

Rare maps, unusual personal memorabilia and rare discretion in compilation make this history of unique interest to doctors everywhere and to many laymen.

This history of medical practice in the state of Illinois embodies, in the course of its narration, an interesting and illustrated digest of the early efforts of white settlers in Illinois, with specific allusion to the share in these tasks performed by medical men. Included are portraits of rare interest, reproductions of historic documents, excerpts from diaries, personal letters, human reminiscences of days fraught with peril, filled with hope, and not devoid of humor, through a period of about 250 years. From the days of the "Chirurgeon" who attended Pere Marquette, through the massacres at Fort Dearborn, the years of Indian raids, down with the circuit-riding "saddle-bag" doctors, to these days of radium and radio, this history marches. Attics, family albums, safe deposit vaults, and state records have been ransacked to produce the material needed for this chronicle. Illinois holds today the honor of being the world's medical center. Progressive steps of this achievement, and its contributive factors such as hospitals, asylums, sanitariums and allied institutions and medical colleges are set forth in detail, both pictorial, documentary and narrative. In brief, this account epitomizes the almost unequalled growth of a community whose economic wealth is paralleled by its public health. Personal data of the men, of the organizations—including pioneer army and navy physicians and surgeons and local, county and district societies, schools and hospitals as well as of the Illinois State Medical Society itself; various internationally famous medical discoveries made by Illinois men; the state's contribution to the world of research; medical libraries and periodicals existent in Illinois; campaigns for medical protection against enemies of public health; details of the various Medical Practice Acts; state sanitation from the notable drainage canal to the supervision of food supplies; vital statistics; meetings, officers, policies and finances of the State Society—all these and more, in accurate transcription, make this history a miniature encyclopedia of scientific advance and desirable and hitherto unavailable information.

The edition is limited. It will not be reprinted. A place in every physician's library is merited by this volume, both as a tribute to the men who blazed the trail for modern scientific medicine and as an ever-present reminder and authority as to what is happening to medicine right in this state every day, so far as finance, discovery, legislation and public relations are concerned, and the men who are responsible for the heritage of trust for over two centuries and a half. Volume One is now ready. Volume Two will follow soon.

**MANUAL OF GYNECOLOGY.** John Osborn Polak, M.Sc., M.D., F.A.C.S. 3rd edition, revised. 402 pages. Illus. Cloth, \$5.00. Philadelphia: Lea and Febiger, 1927.

If one desires a book giving essential facts in gynecology, this is the one to possess. The non-encyclopedic nature of the book makes it valuable to the student as a text book and the practitioner as a ready reference. You will find a paucity of statistics and theoretical discussion. Operative procedures are selected according to the author's opinion as to their merit. Pathology and diagnosis are stressed; symptomatology is concise with italics for the important points; treatment takes a minor position but is sufficient.

J. H. SIMONS, M.D.

**CLINICAL PEDIATRICS.** John Lovett Morse, A.M., M.D. 848 pages. Illus. Cloth, \$9.00. Philadelphia and London: W. B. Saunders Company, 1926.

This reference book is the product of many years of careful and extensive observations. Dr. Morse covers the field of Pediatrics thoroughly and extensively, giving freely of his great experience. The text is concise, well written and at the same time easily read. There are many excellent illustrations throughout. This book will find a useful place in the library of any physician who treats the child.

L. R. CRITCHFIELD, M.D.

**THIS BUSINESS OF OPERATIONS.** James Radley. 96 pages. \$1.00. Cincinnati: The Digest Publishing Co., 1927.

This attractive little volume has a foreword by J. M. Withrow, M.D., Chief of Staff at Christ Hospital, Cincinnati. The book itself represents an apology from a business man to the medical profession for his former lack of appreciation. Having always been a healthy man he had no knowledge of hospitals and classed them with jails as necessary evils in the community. He ignored certain disturbing, prodromal symptoms of ill health until he was suddenly taken ill and rushed to a hospital for an operation. Here he found comfort, "cheer without laughter," efficiency and even beauty. He was greatly impressed by the dignity, reserve and unselfishness of the doctors and the absence of publicity in the entire organization, and he even compared his special nurse to his flapper secretary, to the great discredit of the latter.

At times the details of his mental processes before, as well as after, his hospital experience become somewhat wearisome and the reader may feel that the material put forth is inadequate for a book. But to apprehensive persons about to undergo similar ordeals it may bring comfort and assurance, therefore may prove to be a valuable book to recommend to patients.

MARGARET WARWICK, M.D.

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